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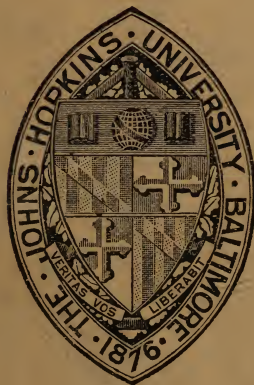
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MEDICAL DEPARTMENT

ESTABLISHED BY THE JOHNS HOPKINS UNIVERSITY
IN CONNECTION WITH THE JOHNS HOPKINS HOSPITAL
BALTIMORE, MARYLAND

EIGHTH ANNUAL CATALOGUE AND ANNOUNCEMENT

1900-1901



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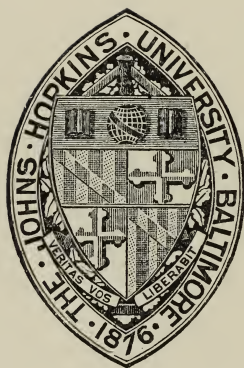
MEDICAL DEPARTMENT

ESTABLISHED BY THE JOHNS HOPKINS UNIVERSITY
IN CONNECTION WITH THE JOHNS HOPKINS HOSPITAL
BALTIMORE, MARYLAND

EIGHTH ANNUAL CATALOGUE AND ANNOUNCEMENT
1900-1901

THE JOHNS HOPKINS PRESS
BALTIMORE

1900



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CALENDAR, 1900-1901

Commencement Day falls on Tuesday, June 12, 1900.

The eighth academic year begins October 1, 1900, and continues till June 15, 1901.

Candidates for admission will assemble in the auditorium of the new Laboratory Building (East Monument and Washington streets), at 10 a. m., on Friday, September 28, and Saturday, September 29, 1900.

The instruction of all classes begins Tuesday, October 2, 1900.

The Thanksgiving Recess begins Wednesday noon preceding Thanksgiving Day, and ends the following Monday morning.

The Christmas Recess begins Friday evening, December 21, 1900.

Exercises will be resumed Wednesday morning, January 2, 1901.

Commemoration Day of the Johns Hopkins University falls on Friday, February 22, 1901.

The Spring Recess begins Thursday morning, April 4, and closes Wednesday evening, April 10, 1901.

The Courses for Graduates in Medicine begin Wednesday, May 1, and close Saturday, June 29, 1901.

The Treasurer's Office is at the University, on North Howard street, and is open daily from 9 a. m. to 4.15 p. m.

The Registrar's Office is in the new Laboratory Building, near the corner of East Monument and Washington streets, and is open daily from 9 a. m. to 5 p. m.

For Catalogues and general information, address REGISTRAR OF THE JOHNS HOPKINS MEDICAL SCHOOL, BALTIMORE, MARYLAND.

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935 St. Paul St.

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Professor of Chemistry

A.B., College of the City of New York, 1865; M.D., Columbia University (College of Physicians and Surgeons, N. Y.), 1867; Ph.D., University of Göttingen, 1870; LL.D., Columbia University, 1893, and Princeton University, 1896; Professor of Chemistry in Williams College, 1872-76, and previously Assistant in Chemistry in the University of Tübingen; Corresponding Member of the British Association; Foreign Member, Chemical Society of London; Honorary Member, Pharmaceutical Society of Great Britain.

12 E. Biddle St.

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Professor of the Principles and Practice of Medicine

M.D., McGill University, 1872; LL.D., McGill University, 1895, University of Edinburgh, 1898, and University of St. Andrews, 1898; Fellow of the Royal College of Physicians, London; Fellow of the Royal Society of London; Professor of the Institutes of Medicine, McGill University, Montreal, 1874-84; Professor of Clinical Medicine, University of Pennsylvania, 1884-89; PHYSICIAN IN CHIEF TO THE JOHNS HOPKINS HOSPITAL.

1 W. Franklin St.

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Professor of Psychiatry

A.B., University of Michigan, 1863, M.D., 1866, A.M., 1870, and LL.D., 1895; Superintendent of the Eastern Michigan Asylum, 1878-89; SUPERINTENDENT OF THE JOHNS HOPKINS HOSPITAL. The Johns Hopkins Hospital.

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A.B., Yale University, 1874; M.D., Columbia University (College of Physicians and Surgeons, N. Y.), 1877; formerly Attending Surgeon to the Presbyterian and Bellevue Hospitals, Associate Surgeon to Roosevelt Hospital, and Surgeon in Chief to the Emigrant Hospital, New York; SURGEON IN CHIEF TO THE JOHNS HOPKINS HOSPITAL. 1201 Eutaw Pl.

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Professor of Gynecology

A.B., University of Pennsylvania, 1877, and M.D., 1882; Associate Professor of Obstetrics, University of Pennsylvania, 1888-89; GYNECOLOGIST IN CHIEF TO THE JOHNS HOPKINS HOSPITAL. 1406 Eutaw Pl.

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Professor of Anatomy

M.D., University of Michigan, 1883; Fellow of the Johns Hopkins University, 1886-88, and Assistant in Pathology, 1888-89; Adjunct Professor of Anatomy, Clark University, 1889-92; Professor of Anatomy, University of Chicago, 1892-93. 200 E. Preston St.

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Ph.B., University of Michigan, 1883; M.D., University of Strassburg, 1888; Professor of Materia Medica and Therapeutics, University of Michigan, 1891-93. 1604 Bolton St.

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A.B., Williams College, 1870, and LL.D., 1893; Ph.D., Harvard University, 1875; Fellow, Johns Hopkins University, 1876, Associate, 1876-83, and Associate Professor, 1883-91; Fellow of the Royal Microscopical Society of London. Lake Roland

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A.B., Johns Hopkins University, 1886; M.D., University of Maryland, 1888; Associate in Obstetrics, 1893-96, and Associate Professor of Obstetrics, 1896-99; OBSTETRICIAN IN CHIEF TO THE JOHNS HOPKINS HOSPITAL.

1128 Cathedral St.

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Clinical Professor of Pediatrics

M.D., University of Virginia, 1867; Consulting Physician to The Thomas Wilson Sanitarium, Baltimore; ASSOCIATE IN PEDIATRICS, THE JOHNS HOPKINS HOSPITAL AND DISPENSARY.

208 W. Monument St.

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Clinical Professor of Dermatology and Instructor in Anatomy

A.B., Johns Hopkins University, 1884; M.D., University of Pennsylvania, 1887; DERMATOLOGIST TO THE JOHNS HOPKINS HOSPITAL AND DISPENSARY.

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M.R.C.S., and L.S.A., London, 1887; DERMATOLOGIST TO THE JOHNS HOPKINS HOSPITAL AND DISPENSARY.

317 N. Charles St.

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Clinical Professor of Psychiatry

M.D., University of Maryland, 1881; ATTENDING PHYSICIAN TO THE CITY ASYLUM AT BAY VIEW.

1303 Park Ave.

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M.B., University of Toronto, 1890; Fellow in Pathology, Johns Hopkins University, 1892-94; Assistant and Associate in Anatomy, 1893-95; Associate Professor of Anatomy, 1896-99; ASSISTANT RESIDENT PATHOLOGIST TO THE JOHNS HOPKINS HOSPITAL.
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2018 Park Ave.

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M.D., University of Maryland, 1891; Assistant Ophthalmic and Aural Surgeon to the Baltimore Eye, Ear and Throat Charity Hospital; ASSISTANT IN OPHTHALMOLOGY AND OTOTOLOGY, THE JOHNS HOPKINS DISPENSARY.
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Assistant in Pathology and Curator of the Museum of Pathology

A.B., University of Toronto, 1894; M.D., Johns Hopkins University, 1897; Resident House Officer, the Johns Hopkins Hospital, 1897-98; Assistant Resident Pathologist, 1899-1900.
The Johns Hopkins Hospital

PERCY M. DAWSON, M.D.

Assistant in Physiology

A.B., Johns Hopkins University, 1894, M.D., 1898, and Fellow in Physiology, 1898-99.
1640 E. Fayette St.

EUGENE L. OPIE, M.D.

Assistant in Pathology

A.B., Johns Hopkins University, 1893 and M.D., 1897; Resident House Officer, Johns Hopkins Hospital, 1897-98; Fellow in Pathology, Johns Hopkins University, 1898-99.
1121 Madison Ave.

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A.B., Johns Hopkins University, 1893, and M.D., 1897; Resident House Officer, the Johns Hopkins Hospital, 1897-98; ASSISTANT IN THE MEDICAL CLINIC, THE JOHNS HOPKINS DISPENSARY.
1401 Eutaw Pl.

MERVIN T. SUDLER, PH.D.

Assistant in Anatomy

S.B., Maryland Agricultural College, 1894; Ph.D., Johns Hopkins University, 1899.
849 N. Eutaw St.

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Demonstrator in Clinical Microscopy

M.B., University of Toronto, 1896; SECOND ASSISTANT RESIDENT PHYSICIAN, THE JOHNS HOPKINS HOSPITAL.
The Johns Hopkins Hospital

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Assistant Librarian at the Johns Hopkins Hospital and Medical School

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Registrar of the University

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Assistant Registrar and Clerk of the Medical Department

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Assistant to the Treasurer

WILLIAM B. CLEMONS.....1602 Harlem Ave.
Bookkeeper in the Treasurer's Office

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 WILLIAM OSLER, M.D..... Physician in Chief
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 ROBERT L. RANDOLPH, M.D.Asst. Ophthalmic and Aural Surgeon

JOHN M. T. FINNEY, M.D.....Associate in Surgery
 WILLIAM S. THAYER, M.D.....Associate in Medicine
 WILLIAM W. RUSSELL, M.D.....Associate in Gynecology
 LEWELLYS F. BARKER, M.B..... Resident Pathologist
 WILLIAM G. MACCALLUM, M.D... Assistant Resident Pathologist
 THOMAS S. CULLEN, M.B... Associate in Gynecological Pathology

THOMAS B. FUTCHER, M.B..... Resident Physician
 HARVEY W. CUSHING, M.D..... Resident Surgeon
 G. BROWN MILLER, M.D..... Resident Gynecologist
 WILLIAM W. DABNEY, M.D..... Resident Obstetrician

THOMAS McCRAE, M.BFirst Assistant Resident Physician
 NORMAN B. GWYN, M.B.... Second Assistant Resident Physician
 LOUIS W. LADD, M.D.....Acting Assistant Resident Physician
 JAMES F. MITCHELL, M.D.....First Assistant Resident Surgeon
 WILLIAM S. BAER, M.D..... Second Assistant Resident Surgeon
 GUY L. HUNNER, M.D..... First Assistant Resident Gynecologist
 BENJAMIN R. SCHENCK, M.D.... Sec. Asst. Resident Gynecologist
 FRANK W. LYNCH, M.D.....Assistant Resident Obstetrician

Resident House Officers

Appointed by the Trustees of the Hospital from the class which was graduated in medicine at the Johns Hopkins University in June, 1899.

EDWARD E. BROWNELL, M.D.,	HENRY HARRIS, M.D.,
HUMPHREY W. BUCKLER, M.D.,	JOHN A. LUETSCHER, M.D.,
RUFUS I. COLE, M.D.,	J. HALL PLEASANTS, JR., M.D.
JOHN S. DAVIS, M.D.,	JOHN A. SAMPSON, M.D.,
CHARLES P. EMERSON, M.D.,	SARAH D. WYCKOFF, M.D.,
JOSEPH ERLANGER, M.D.,	JOHN L. YATES, M.D.

Externes

RICHARD H. FOLLIS, M.D.,	FREDERICK H. VERHOEFF, M.D.
EDGAR R. STROBEL, M.D.,	

Out-Patient Department

HENRY M. HURD, M.D.....	Superintendent
WILLIAM OSLER, M.D.....	Physician in Chief
WILLIAM S. HALSTED, M.D.....	Surgeon in Chief
HOWARD A. KELLY, M.D.....	Gynecologist in Chief
J. WHITRIDGE WILLIAMS, M.D.....	Obstetrician in Chief

Department of General Medicine

FRANK R. SMITH, M.D.,	}	Heads of Department
WILLIAM S. THAYER, M.D.,		
THOMAS R. BROWN, M.D.....		Chief of Clinic
CHARLES W. LARNED, M.D.,	}	Clinical Assistants
CHARLES D. PARFITT, M.D.,		
JOHN S. BISHOP, M.D.,		
LOUIS P. HAMBURGER, M.D.,		

Department of General Surgery

JOHN M. T. FINNEY, M.D.....	Head of Department
NATHANIEL E. B. IGLEHART, M.D. }Chiefs of Clinic
GEORGE WALKER, M.D.,	
SIDNEY M. CONE, M.D.....	Clinical Assistant

Department of Dermatology

T. CASPAR GILCHRIST, M.R.C.S., }Heads of Department
J. WILLIAMS LORD, M.D.,	

Department of Diseases of Children

WILLIAM D. BOOKER, M.D.....	Head of Department
-----------------------------	--------------------

Department of Genito-Urinary Diseases

HUGH H. YOUNG, M.D.....Head of Department
 WILLIAM M. ROBERTS, M.D., }
 WILLIAM E. HUGER, M.D., } Clinical Assistants

Department of Gynecology

WILLIAM W. RUSSELL, M.D.....Head of Department
 OTTO G. RAMSAY, M.D.....Chief of Clinic
 ELIZABETH HURDON, M.D., }
 CHARLES J. CARROLL, M.D., } Clinical Assistants

Department of Laryngology and Rhinology

JOHN N. MACKENZIE, M.D.....Head of Department
 MACTIER WARFIELD, M.DChief of Clinic

Department of Clinical Neurology

HENRY M. THOMAS, M.D.....Head of Department
 STEWART PATON, M.D.....Chief of Clinic
 EDWARD M. SINGEWALD, M.D., }
 ROBERT REULING, M.D., } Clinical Assistants

Department of Obstetrics

J. WHITRIDGE WILLIAMS, M.D.....Head of Department
 WILLIAM W. DABNEY, M.D.....Chief of Clinic
 FRANK W. LYNCH, M.D..... Clinical Assistant

Department of Ophthalmology and Otology

SAMUEL THEOBALD, M.D.....Head of Department
 ROBERT L. RANDOLPH, M.D.,
 Assistant Ophthalmic and Aural Surgeon and Chief of Clinic
 HENRY O. REIK, M.D, }
 JAMES J. MILLS, M.D., }
 JAMES BORDLEY, JR., M.D., } Clinical Assistants

Medical Board of the Johns Hopkins Hospital

WILLIAM S. HALSTED,	WILLIAM OSLER (Chairman),
HENRY M. HURD,	WILLIAM H. WELCH,
HOWARD A. KELLY,	J. WHITRIDGE WILLIAMS.

Under the Rules and Regulations of the Johns Hopkins Hospital it is "the duty of the Medical Board to advise the Trustees in all matters relating to the welfare of the Hospital."

Medical Staff of the City Asylum at Bay View in its Department for the Insane

HENRY J. BERKLEY, M.D.....	Attending Physician
STEWART PATON, M.D.,	} Assistant Attending Physicians
EDWARD M. SINGEWALD, M.D.,	
RICHARD A. URQUHART, M.D.....	Resident Physician
CHESTER L. MAGEE, M.D.	} Assistant Resident Physicians
HARRY A. COTTON, M.D.,	

The Trustees of the Poor of the City of Baltimore have granted to the Medical Faculty of the Johns Hopkins University the privilege of nominating the members of the Medical Staff of the Insane Department of the City Asylum. Here the students receive clinical instruction in psychiatry.

PART I

CATALOGUE AND ANNOUNCEMENT OF THE
COURSES OF INSTRUCTION FOR CANDIDATES
FOR THE DEGREE OF
DOCTOR OF MEDICINE

STUDENTS, 1899-1900

CANDIDATES FOR THE DEGREE OF DOCTOR OF MEDICINE.

FOURTH YEAR

- AKERMAN, JOSEPH Athens, Ga.....1727 Fairmount Ave.
A.B., University of Georgia, 1894, and Graduate Student, 1895-96.
- ALLEN, HERBERT WILLIAMS..... Oakland, Cal.....810 N. Broadway
S.B., University of California, 1896.
- AUSTIN, MABEL FLETCHER..... Minneapolis, Minn..1528 N. Broadway
S.B., University of Minnesota, 1896.
- BEALE, ALMA EMERSON..... Schaghticoke, N. Y., 1701 Fairmount Ave.
A.B., Wellesley College, 1891; Marine Biological Laboratory, Wood's Holl, 1893.
- BETTMANN, MILTON Cincinnati, O.....812 N. Broadway
A.B., Harvard University, 1897.
- BRIGGS, EVELYN Wadsworth, O.....1042 N. Eden St.
A.B., Leland Stanford Jr. University, 1896.
- BROWN, LAWRASON Casanova, Va.....1718 E. Madison St.
A. B., Johns Hopkins University, 1895.
- BRÜLLE, HERMAN Fredericksburg, Va..1016 N. Broadway
A.B. and S.B., Hampden-Sidney College, 1895; Graduate Student, Johns Hopkins
University, 1895-96.
- BURNAM, CURTIS FIELD..... Frankfort, Ky.....1128 McCulloh St.
A.B., Central University (Ky.), 1895, Graduate Student, Johns Hopkins University,
1895-96.
- CHACE, ELEANOR SARAH..... Fall River, Mass.....144 Jackson Pl.
S.B., Wellesley College, 1894.
- CHITTENDEN, ARTHUR SMITH.... Binghamton, N. Y.....132 Jackson Pl.
A.B., Yale University, 1896.
- CHRISTIAN, HENRY ASBURY..... Lynchburg, Va.....804 N. Broadway
A.B. and A.M., Randolph-Macon College, 1895, and Graduate Student, 1895-96.
- DANCY, WILLIAM REMSHART.... Savannah, Ga.....802 N. Broadway
S.B., University of Georgia, 1896.
- EGGERS, AUGUSTUS HARTJE..... Allegheny, Pa.....802 N. Broadway
Ph.B., Yale University, 1896.
- EVANS, HENRY COURTNEY..... Youngstown, O....802 N. Howard St.
A.B., Adelbert College, 1896.

- FAIRBANK, ROSE Hatfield, Mass.....313 N. Broadway
A.B., Smith College, 1895.
- FARRAR, CLARENCE B..... Cattaraugus, N. Y...The "Broadway"
A.B., Harvard University, 1896.
- FISHER, ARTHUR LAWRENCE..... San Francisco, Cal.....126 Jackson Pl.
S.B., University of California, 1896.
- FISHER, WM. ALEXANDER, JR.... Baltimore.....8 W. Mt. Vernon Pl.
A.B., Princeton University, 1896.
- FLETCHER, HOWARD Warrenton, Va...1731 Fairmount Ave.
A.B., Randolph-Macon College, 1895, and Graduate Student, 1895-96.
- FLINT, JOSEPH MARSHALL..... Chicago, Ill.....Govanstown
S.B., University of Chicago, 1895.
- HEALY, WILLIAM PATRICK..... Bridgeport, Conn...810 N. Broadway
Ph.B., Yale University, 1896.
- HENDRICKSON, WM. FAITHFUL.. Baltimore236 N. Carey St.
A.B., Johns Hopkins University, 1896.
- HEWLETT, ALBION WALTER..... San Francisco, Cal...806 N. Broadway
S.B., University of California, 1895; Graduate Student, University of Chicago.
- KELLOGG, WILLIAM CRISSEY.... New Canaan, Conn...802 N. Broadway
A.B., Yale University, 1896.
- KYES, PRESTON North Jay, Me.....1757 Jefferson St.
A.B., Bowdoin College, 1896.
- LEBUS, LEONA Los Angeles, Cal.....707 N. Broadway
S.B., Wellesley College, 1889.
- LEWIS, WARREN HARMON..... Oak Park, Ill.....1757 Jefferson St.
S.B., University of Michigan, 1896.
- LITTLE, HARRY WILSON..... Evansville, Ind.....422 N. Broadway
S.B., Wabash College, 1896.
- LOWELL, ELLEN LOUISE..... Calais, Me.....811 N. Broadway
A.B., Leland Stanford Jr. University, 1896.
- MACCALLUM, JOHN BRUCE..... Dunnville, Ont.....1757 Jefferson St.
A.B., University of Toronto, 1896.
- MARVELL, MARY WILBUR..... Fall River, Mass.....144 Jackson Pl.
S.B., Wellesley College, 1894.
- MELTZER, CLARA R..... New York, N. Y...1701 Fairmount Ave.
A.B., Barnard College, 1896.
- MOSHER, CLELIA DUEL Palo Alto, Cal.....811 N. Broadway
A.B., Leland Stanford Jr. University, 1893, and A.M., 1894.
- MYRICK, HANNAH GLIDDEN.... Dorchester, Mass.....129 Jackson Pl.
A.B., Smith College, 1896.
- OLIVER, EDWARD SPILLER Saranac Lake, N. Y.
A.B., Johns Hopkins University, 1895.

- RAND, RICHARD FOSTER.....Meriden, Conn....1707 Fairmount Ave.
Ph.B., Yale University, 1895, and Graduate Student, 1895-96.
- REED, DOROTHY M.....Leyden, N. Y.....715 St. Paul St.
B.L., Smith College, 1895; Graduate Student, Mass. Institute of Technology, 1895-96.
- RUSK, GLANVILLE YEISLEY.....Baltimore.....2000 E. Baltimore St.
A.B., Johns Hopkins University, 1896.
- SABIN, FLORENCE RENA.....Denver, Col.....129 Jackson Pl.
S.B., Smith College, 1893; Assistant in Zoology, Smith College, 1895-96.
- SOWERS, WM. FR' CIS MATTINGLY. Washington, D. C...1757 Jefferson St.
A.B., Princeton University, 1896.
- STONE, ELLEN APPLETONProvidence, R. I.....529 N. Wolfe St.
A.B., Radcliffe College, Harvard University, 1895; A.M., Brown University, 1896.
- WARREN, MORTIMERCumberland Mills, Me., 1757 Jefferson St.
A.B., Bowdoin College, 1896.
- WEST, JOHN MONTGOMERY.....Baltimore.....2433 Maryland Ave.
A.B., Johns Hopkins University, 1896.
- WOOLLEY, PAUL GERHARDT.....Chicago, Ill.....1421 McCulloh St.
S.B., University of Chicago, 1896.

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THIRD YEAR

- ATHERTON, ALEX. MONTAGUE...Honolulu, H. I.....122 Jackson Pl.
A.B., Wesleyan University, 1897.
- BAETJER, FREDERICK HARRY....Winchester, Va.....615 Park Ave.
A.B., Johns Hopkins University, 1897.
- BALDWIN, WILLIAM DWIGHT....Haiku, H. I.....707 N. Broadway
A.B., Yale University, 1897.
- BERRY, JOHN MCWILLIAMSPeterboro, N. Y....1640 E. Fayette St.
S.B., Cornell University, 1897.
- BLAKESLEE, WALTER HERBERT..Coatesville, Pa.....1032 N. Broadway
A.B., Amherst College, 1897.
- BLOOMBERGH, HORACE DECHAMPS..Easton, Pa.....1024 N. Broadway
A.B., Lafayette College, 1897.
- BOGGS, THOMAS RICHMONDAthens, Ga.....203 W. Lanvale St.
S.B., University of Georgia, 1896, and Graduate Student, 1896-97.
- BOSLEY, JOHN ROBERT.....Baltimore.....1403 Park Ave.
A.B., Western Maryland College, 1896; Graduate Student, Johns Hopkins University, 1896-97.
- BUNTING, CHARLES HENRY.....La Crosse, Wis.....244 W. Lanvale St.
S.B., University of Wisconsin, 1896, and Fellow in Biology, 1896-97.
- BUTLER, JOEL IVES.....Meriden, Conn.....112 Jackson Pl.
Ph.B., Yale University, 1897.
- CAREY, HARRY WARDELLStamford, Conn.....1814 N. Broadway
A.B., Yale University, 1897.

- CHOWNING, WILLIAM MACK.....Rock Island, Ill.....615 St. Paul St.
S.B., Knox College, 1894; A.B., Johns Hopkins University, 1895.
- COMER, ROBERT THORNTON.....James, Ala.....1938 McElderry St.
A.B., University of Alabama, 1896; Graduate Student, Johns Hopkins University,
1896-97.
- CONNOR, GUY LEARTUS.....Detroit, Mich.....1640 E. Fayette St.
A.B., Williams College, 1897.
- CONNOR, RAYDetroit, Mich.....1640 E. Fayette St.
A.B., Williams College, 1897.
- DRAKE, GEORGE SILAS, JR.....St. Louis, Mo....1705 Fairmount Ave.
A.B., Yale University, 1897.
- DUTCHER, ADELAIDEMadison, Wis.....1923 Jefferson St.
S.B., University of Wisconsin, 1897.
- FOWLER, HARRY ATWOOD.....Minneapolis, Minn..1014 N. Broadway
S.B., University of Minnesota, 1895; Graduate Student, University of Chicago, 1896.
- GAY, FREDERICK PARKER.....Boston, Mass.....935 St. Paul St.
A.B., Harvard University, 1897.
- GRAHAM, NEIL DUNCAN.....Falls Church, Va....602 N. Charles St.
A.B., Johns Hopkins University, 1897.
- HALL, GARDNER WELLS.....Newton, Mass.....1005 N. Charles St.
A.B., Harvard University, 1898.
- HAMMAN, LOUIS VIRGIL.....Baltimore.....2500 Madison Ave.
A.B., Rock Hill College, 1896; Graduate Student, Johns Hopkins University, 1896-97.
- HASTREITER, ROLLAND FREDERICK..Madison, Wis.....104 Jackson Pl.
S.B., University of Wisconsin, 1897.
- HATHAWAY, JOSEPH HENRYGrinnell, Iowa.....615 St. Paul St.
A.B., Iowa College, 1894; A.B., Harvard University, 1896, and A.M., 1897.
- HITZROT, JAMES MORLEY.....McKeesport, PaGovanstown
A.B., Princeton University, 1897.
- HOLDEN, GERRY ROUNDS.....Baltimore1716 N. Broadway
A.B., Yale University, 1897.
- HUME, EDWARD HICKS.....Bombay, India.....707 N. Broadway
A.B., Yale University, 1897.
- JOHNSTON, WILLIAM BERNARD..Washington, D. C., 1005 N. Charles St.
A.B., Harvard University, 1897.
- KAUFFMANN, BURT BRONSON....St. Louis, Mo.....118 Jackson Pl.
A.B., Yale University, 1897.
- KAUFMAN, HARRY M.....Washington, D. C...1022 N. Broadway
A.B., Johns Hopkins University, 1897.
- LAMSON, THEODOREBoston, Mass.....118 Jackson Pl.
Ph.B., Yale University, 1897.
- LEWIS, DWIGHT MILTON.....New Haven, Conn..1701 N. Broadway
A.B., Yale University, 1897.

- LONG, MARGARET Hingham, Mass.....715 St. Paul St.
A.B., Smith College, 1895; Graduate Student, Massachusetts Institute of Technology,
1896-97.
- LONGCOPE WARFIELD THEOBALD, Baltimore136 Richmond St.
A.B., Johns Hopkins University, 1897.
- LYLE, ANNIE GALLOWAY..... San Francisco, Cal., 213 W. Mon'm't St.
A.B., Leland Stanford Jr. University, 1895.
- MADDREN, WILLIAM HARVEY ... Brooklyn, N. Y....1610 E. Preston St.
S.B., Brooklyn Polytechnic Institute, 1896; Graduate Student, Johns Hopkins Uni-
versity, 1896-97.
- MOORE, ELIZABETH SUTTON..... Brookville, Pa.....118 Jackson Pl.
S.B., Wilson College (Pa.), 1895; Graduate Student, Cornell University, 1896-97.
- PARKER, HENRY PICKERING..... Howard County.....St. Denis P. O.
A.B., Johns Hopkins University, 1896.
- RUBEL, MAURICE J..... Chicago, Ill.....100 Jackson Pl.
S.B., University of Chicago, 1897.
- SALTER, JOHN CLEVELAND Carbondale, Ill....1705 Fairmount Ave.
A.B., Yale University, 1897.
- SIMIS, MABEL PALMER.... Vail's Gate, N. Y..Mt. Holly, nr. Walbrook
S.B., Cornell University, 1897.
- SLEMONS, JOSIAH MORRIS..... Salisbury.....1024 N. Broadway
A.B., Johns Hopkins University, 1897.
- SMITH, HERBERT MELOY..... Salem, Va.....1014 N. Broadway
A.B., Roanoke College, 1892, and A.M., 1897; Graduate Student, Johns Hopkins
University, 1894-95.
- SPRATT, CHARLES NELSON..... Minneapolis, Minn...821 N. Broadway
S.B., University of Minnesota, 1897.
- STEIN, GERTRUDE Baltimore.....215 E. Biddle St.
A.B., Radcliffe College, Harvard University, 1898.
- STEINFELD, ALBERT LOUIS..... Baltimore.....318 N. Carey St.
A.B., Johns Hopkins University, 1897.
- SWETT, CARLOTTA MARY Bangor, Me.....239 W. Biddle St.
A.B., Wellesley College, 1896; Graduate Student, Maine State College, 1896.
- ULRICH, HENRY LUDWIG..... Newark, N. J.....1734 E. Fayette St.
S.B., Rutgers College, 1897.
- UNDERHILL, ALBERT JAMES BaltimoreWalbrook
A.B., Johns Hopkins University, 1897.
- WALKER, MARION BARTHOLOW.. Cambridge, Mass.....529 N. Wolfe St.
A.B., Radcliffe College, Harvard University, 1898.
- WARFIELD, LOUIS MARSHALL ... Savannah, Ga.....901 N. Calvert St.
A.B., Johns Hopkins University, 1897.
- WARREN, GEORGE WILLIAM..... Portland, Me.....1014 N. Broadway
A.B., Johns Hopkins University, 1897.

- WATTS, STEPHEN HURT..... Lynchburg, Va.....804 N. Broadway
A.M., Randolph-Macon College, 1896; Graduate Student, University of Virginia,
1896-97.
- WELLS, ERNEST ALDEN Hartford, Conn.....527 N. Wolfe St.
A.B., Yale University, 1897.
- WELLS, MABEL Monticello, Ark.....239 W. Biddle St.
A.B., Wellesley College, 1896; Graduate Student, University of Zürich, 1897.
- WINNE, CHAS. KNICKERBACKER, JR., Baltimore.....1624 Linden Ave.
A.B., Johns Hopkins University, 1897.

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SECOND YEAR

- AUER, JOHN Chicago, Ill.....107 Jackson Pl.
S.B., University of Michigan, 1898.
- BRIGGS, JOHN BRADFORD, JR.... Baltimore.....10 E. Madison St.
S.B., New York University, 1898.
- BROWNE, BENNET BERNARD, JR.. Baltimore.....510 Park Ave.
A.B., Johns Hopkins University, 1898.
- BRUNS, ROBERT MARTIN..... New Orleans, La.....1401 Park Ave.
A.B., University of Virginia, 1896; Graduate Student, Johns Hopkins University,
1897-98.
- BRYAN, WILLIAM MORGAN CASE. St. Louis, Mo.....1610 E. Preston St.
A.B., Washington University, 1897; M.S., University of Michigan, 1898.
- BUSH, CAMILLUS Woodland, Cal....106 W. Saratoga St.
S.B., University of California, 1898.
- CHURCHMAN, JOHN WOOLMAN... Burlington, N. J.....802 N. Broadway
A.B., Princeton University, 1898.
- CLARKE, THOMAS WOOD..... Utica, N. Y.....144 Jackson Pl.
A.B., Harvard University, 1899.
- COOK, HENRY WIREMAN Baltimore.....The St. Paul
A.B., Johns Hopkins University, 1898.
- COONS, JACOB JONES..... Milledgeville, O.....1016 N. Broadway
S.B., Ohio Wesleyan University, 1898.
- DOHME, GUSTAVUS CHARLES.... Baltimore.....1808 Guilford Ave.
A.B., Johns Hopkins University, 1898.
- DOLLEY, DAVID HOUGH..... Hillsboro, Va.....1019 N. Broadway
A.B., Randolph-Macon College, 1897, and A.M., 1898.
- DUDLEY, HARLAN Monroeville, O.....909 N. Broadway
Ph.B., Oberlin College, 1897; Graduate Student, Johns Hopkins University, 1898.
- DUFFY, RALPH Baltimore.....1610 Park Ave.
A.B., Johns Hopkins University, 1898.
- DUNLOP, JOHN Washington, D. C....626 N. Broadway
S.B., Princeton University, 1898.
- EDDY, DANA LEE..... Leavenworth, Kan....1412 E. Chase St.
A.B., Yale University, 1898.

- ERVING, WILLIAM GAGE.....Hartford, Conn...1727 Fairmount Ave.
A.B., Yale University, 1898.
- FERRY, NEWELL SIMMONS.....New Haven, Conn...718 N. Broadway
Ph.B., Yale University, 1898.
- FOSTER, NELLIS BARNES.....Utica, N. Y.....805 N. Broadway
S.B., Amherst College, 1898.
- FRANCIS, WM. WILLOUGHBY.....Toronto, Ont.....1 W. Franklin St.
A.B., Johns Hopkins University, 1898.
- FRANKENTHAL, MAURICE ALBERT, St. Louis, Mo.....108 Jackson Pl.
A.B., Washington University, 1898.
- GLENNY, W. HARRYBuffalo, N. Y.....1013 Cathedral St.
Ph.B., Yale University, 1894, and Graduate Student, 1897-98.
- GRANT, JUSTIN FRANKStamford, Conn.....718 N. Broadway
Ph.B., Yale University, 1898.
- HARDY, CLARENCE FOSTER.....Waukesha, Wis.....1014 N. Broadway
B.L., University of Wisconsin, 1891.
- HAVILAND, MORRISON LE ROY..Glens Falls, N. Y....805 N. Broadway
Ph.B., Union College, 1898.
- HAYNES, MABEL STEVENS.....Boston, Mass.....The Saint Paul
A.B., Bryn Mawr College, 1898.
- HIRSHBERG, LEONARD KEENE...Baltimore.....581 N. Gay St.
A.B., Johns Hopkins University, 1898.
- HORST, CARL HERMAN.....Butte City, Mont.....700 N. Broadway
A.B., Leland Stanford Jr. University, 1898.
- HYMAN, SOLOMONSan Francisco, Cal.....126 Jackson Pl.
S.B., University of California, 1898.
- JELKE, WILLIAM FREDERICKCincinnati, O.....1703 N. Broadway
Ph.B., Yale University, 1898.
- JONES, THOMAS MONROE.....Anderson, Ind.....700 N. Broadway
A.B., Indiana University, 1898.
- KARSTED, ALFREDButte City, Mont....1019 N. Broadway
A.B., Leland Stanford Jr. University, 1898.
- KIMBALL, ARTHUR HERBERTWashington, D. C...1022 N. Broadway
S.B., Amherst College, 1897.
- LEHR, LOUIS CHARLES.....Baltimore7 E. Chase St.
A.B., Johns Hopkins University, 1898.
- L'ENGLE, EDWARD MCCRADY....Baltimore.....13 E. Preston St.
A.B., St. John's College, 1897; Graduate Student, Johns Hopkins University, 1897-98.
- LITCHFIELD, GEO. VICTOR, JR...Abingdon, Va....1731 Fairmount Ave.
A.M., Randolph-Macon College, 1897.
- LOOTZ, EMMABoston, Mass.....1709 Fairmount Ave.
A.B., Smith College, 1897.

- LUDLUM, SEYMOUR DE WITT....Paterson, N. J.....909 N. Broadway
S.B., Rutgers College, 1897.
- MACGREGOR, GEORGE MALCOLM. Lancaster, Wis.....909 N. Broadway
S.B., University of Wisconsin, 1898.
- MARSHALL, SAMUEL ANDREW ...Cromwell, Conn..1727 Fairmount Ave.
A.B., Yale University, 1898.
- McFARLAND, JOHN SCOTT.....Buffalo, N. Y.....114 Jackson Pl.
Ph.B., Yale University, 1898.
- MEISENHOLDER, EDMUND WEBSTER., York, Pa.505 N. Wolfe St.
A.B., Pennsylvania College, 1898; Graduate Student, Harvard Summer School, 1898.
- MEISENHOLDER, JOHN ELMER...Hanover, Pa.....505 N. Wolfe St.
S.B., Pennsylvania College, 1897; Graduate Student, Johns Hopkins University,
1897-98.
- OCHSNER, HENRY WILLIAM....Waumandee, Wis.1714 Fairmount Ave.
S.B., University of Wisconsin, 1898.
- PELTON, GARNET ISABEL.....Colorado Springs, Col.1033 Cathed'l St.
S.B., Wellesley College, 1897.
- PRATT, FREDERICK HAVEN.....Worcester, Mass....1640 E. Fayette St.
A.B., Harvard University, 1896, and A.M., 1898; Harvard Medical School, 1898-99.
- REEDE, EDWARD HIRAM.....Baltimore.....1224 N. Broadway
A.B., Cornell University, 1898.
- RIGGINS, EDWIN NICHOLAS.....E. Orange, N. J....1734 E. Fayette St.
A.B., Williams College, 1897.
- ROGERS, CAREY PEGRAMRaleigh, N. C.....1610 E. Preston St.
A.B., Wake Forest College, 1897; Graduate Student, Johns Hopkins University,
1897-98.
- SCHOLL, GEORGE BARR.....Baltimore.....1005 W. Lanvale St.
A.B., Johns Hopkins University, 1898.
- SILVERBERG, MELVILLESan Francisco, Cal.....126 Jackson Pl.
A.B., University of California, 1897.
- SIMPSON, JOHN NATHAN.....Pt. Pleasant, W. Va..700 N. Broadway
A.B., University of Nashville, 1898.
- STEELE, H. MERRIMAN.....Waterbury, Conn.....1613 John St.
Ph.B., Yale University, 1894.
- TALLANT, ALICE WELD.....Boston, Mass....1709 Fairmount Ave.
A.B., Smith College, 1897; Graduate Student, Massachusetts Institute of Technology,
1897-98.
- VAN ARSDALL, CONDIT BREWER. Harrodsburg, Ky.....1225 Park Ter.
A.B., Kentucky Wesleyan College, 1894, and A.M., 1898; A.B., University of
Michigan, 1898.
- VAN DENBURGH, JOHN.....San Francisco, Cal...813 N. Broadway
A.B., Leland Stanford Jr. University, 1894, A.M., 1895, and Ph.D., 1897.
- WIGHT, OTIS BUCKMINSTER, Stanford Univ., Cal...813 N. Broadway
A.B., Leland Stanford Jr. University, 1898.

- WILLIAMS, CLARA LOUISE.....San Francisco, Cal.....129 Jackson Pl.
S.B., University of California, 1897, and M.S., 1898.
- WILLIAMS, DUDLEYBaltimore.....1128 Cathedral St.
A.B., Johns Hopkins University, 1897, and Graduate Student, 1897-98.
- WRIGHT, CHARLES BENJAMIN....Gd. Forks, N. Dak..1224 N. Broadway
A.B., University of North Dakota, 1898.

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FIRST YEAR

- BARKER, MARY LOUISEPottsville, Pa.....239 W. Biddle St.
A.B., Wellesley College, 1899; Graduate Student, Harvard Summer School, 1899.
- BASSETT, VICTOR HUGO.....Aledo, Ill.....1910 E. Madison St.
A.B., Knox College, 1896; Graduate Student, Universities of Wisconsin and Michigan, 1897-98.
- BENNETT, RUTHChicago, Ill.....1248 N. Broadway
A.B., University of Illinois, 1899; Graduate Student, University of Illinois, Summer of 1899.
- BIXLER, LEWIS CLYDE.....Easton, Pa.....720 N. Broadway
A.B., Lafayette College, 1899.
- BLAUVELT, ELIZABETH HEDGES..Franklin Park, N. J..925 McCulloh St.
A.B., Bryn Mawr College, 1896.
- BRUSH, CLINTON ETHELBERT, JR.Baltimore.....10 E. Madison St.
S.B., New York University, 1899.
- CHATARD, JOSEPH ALBERT.....Baltimore.....516 Park Ave.
A.B., Loyola College, 1898; Graduate Student, Johns Hopkins University, 1898-99.
- CHINN, GEORGE EDWARD, JR....Fayette, Mo.....911 N. Broadway
S.B., Central College (Mo.), 1899.
- CLARK, ALFRED HULLBuffalo, N. Y.....122 Jackson Pl.
A.B., Cornell University, 1899.
- CORNELL, WILLIAM BURGESS...Chicago, Ill.....802 N. Broadway
A.B., University of Chicago, 1899.
- DEWEY, EMMA GRACE.....Jacksonville, Ill.....144 Jackson Pl.
S.B., Wellesley College, 1885, and A.M., 1894; Graduate Student, University of Chicago, 1898-99.
- EDWARDS, RALPH TORREY.....Galesburg, Ill.....1821 Jefferson St.
A.B., Knox College, 1897, and A.M., 1899.
- FAYERWEATHER, ROADESChicago, Ill.....527 N. Wolfe St.
A.B., Harvard University, 1899.
- FISCHER, JOHN SOMERVILLE....Baltimore.....9 E. Biddle St.
A.B., Johns Hopkins University, 1898, and Graduate Student, 1898-99.
- GAENSLER, FREDERICK JULIUS...Milwaukee, Wis.....104 Jackson Pl.
S.B., University of Wisconsin, 1899.
- GAINES, LEWIS MCFARLANDDecatur, Ga.....1727 Fairmount Ave.
A.B. and B.S., Hampden-Sidney College, 1898; Graduate Student, University of Virginia, 1898-99.

- GERAGHTY, JOHN TIMOTHY.....St. Paul, Minn.....1042 N. Eden St.
A.B., St. Thomas College, 1895; Ph.B., St. Paul Seminary, 1897; Graduate Student,
Johns Hopkins University, 1897-98.
- GOLDSBOROUGH, FRANCIS C....Baltimore.....924 St. Paul St.
S.B., Princeton University, 1899.
- HASKELL, LOUIS WARDLAW, JR..Savannah, Ga.....706 N. Broadway
A.B., Johns Hopkins University, 1899.
- HIRSCHFELDER, ARTHUR DOUGLASS, San Francisco, Cal. .107 Jackson Pl.
S.B., University of California, 1897; Student in Paris and Heidelberg, 1898-99.
- HOPKINS, ROSSHolton, Kan.....908 N. Broadway
A.B. and S.B., Campbell University, 1897; A.B., Kansas State University, 1899;
Graduate Student, University of Chicago, 1899.
- HUNTER, PAUL STUARTPittsburgh, Pa.....1742 Jefferson St.
A.B., West Virginia University, 1899.
- HUTCHINS, HENRY TALBOT.....Worcester, Mass.....700 N. Broadway
A.B., Amherst College, 1899.
- JONES, CLEMENT LEVIJamestown, O.....1016 N. Broadway
S.B., Washington and Jefferson College, 1899.
- KEIDEL, ALBERTBaltimore.....1303 N. Calvert St.
A.B., Johns Hopkins University, 1900.
- KINGSBURY, HOMER PENFIELD DONALDSON, New York City.
A.B., Harvard University, 1899. 103 Jackson Pl.
- LAZENBY, MAURICEBaltimore.....800 W. North Ave.
A.B., Johns Hopkins University, 1900.
- LOEVENHART, ARTHUR SOLOMON.Lexington, Ky.....521 N. Wolfe St.
S.B., Kentucky State College, 1898, and M.S., 1899.
- LONG, HENRY D.....Greensburg, Pa.....908 N. Broadway
A.B., Washington and Jefferson College, 1894, and A.M., 1897; Graduate Student,
Cornell University Summer School.
- LUPTON, EDW. JANNEY SIDWELL.Martinsburg, W. Va.1022 N. Broadway
S.B., Columbian University, 1899.
- LYNCH, LEO AUGUSTINEOlyphant, Pa.....720 N. Broadway
A.B., Yale University, 1899.
- MANNING, WILLIAM SANDERS...Washington, D. C...1022 N. Broadway
S.B., Columbian University, 1899.
- MARSHALL, WATSONPittsburgh, Pa.....700 N. Broadway
A.B., Princeton University, 1899.
- MCCLINTOCK, ROY WHITE.....Wilkesburg, Pa.....421 N. Ann St.
A.B., Washington and Jefferson College, 1897.
- MILLER, ROBERT TALBOTT, JR...Covington, Ky.....700 N. Broadway
A.B., Amherst College, 1899.
- MORSE, MARY ELIZABETH.....Baltimore.....726 Reservoir St.
A.B., Woman's College of Baltimore, 1899.

MOULTON, WILLIS BEAN.....	Portland, Me.....	122	Jackson Pl.
A.B., Bowdoin College, 1899.			
NEAGLE, HARRY BENJAMIN.....	Lubec, Me.....	122	Jackson Pl.
A.B., Bowdoin College, 1899.			
RAINFORTH, SELDEN IRWIN	Cincinnati, O.....	209	E. Preston St.
S.B., University of Cincinnati, 1899.			
RILEY, BENJAMIN FRANKLIN, JR.....	Athens, Ga.....	1027	N. Broadway
S.B., University of Georgia, 1898.			
ROBINSON, GEORGE CANBY.....	Baltimore.....	1001	St. Paul St.
A.B., Johns Hopkins University, 1899.			
SCHMITTER, FERDINAND	Albany, N. Y.....	1731	Fairmount Ave.
A.B., Union College, 1899.			
SCHULTZ, OSCAR THEODORE.....	Mt. Vernon, Ind.....	521	N. Wolfe St.
A.B., Indiana University, 1897.			
SMITH, WINFORD HENRY.....	Westbrook, Me.....	1020	N. Broadway
A.B., Bowdoin College, 1899.			
STEVENS, ALEXANDER RAYMOND.....	Baltimore.....	30	E. Twentieth St.
A.B., Johns Hopkins University, 1896.			
TAYLER, LOUISE	Washington, D. C.....	227	W. Preston St.
A.B., Wellesley College, 1896; M.S., Columbian University, 1898.			
THOMPSON, WILLIAM LAWTON ..	Portland, Me.....	1020	N. Broadway
A.B., Bowdoin College, 1899.			
TRAVIS, CATHERINE HUTCHINSON.....	Hampton, Canada....	716	N. Carey St.
A.B., McGill University, 1895; Graduate Student, Harvard Summer School, 1899.			
WATSON, FRANK HOSFORD	Milwaukee, Wis....	1020	N. Broadway
S.B., University of Wisconsin, 1899.			
YOUNG, CHARLES WHITTIER.....	Chicago, Ill.....	1821	Jefferson St.
S.B., University of Illinois, 1897.			

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DOCTORS OF MEDICINE OF THE JOHNS HOPKINS UNIVERSITY

1897

- BARDEEN, CHARLES RUSSELL, A.B., Harvard University, 1893.—Associate in Anatomy, Johns Hopkins Medical School.
- BROWN, THOMAS RICHARDSON, A.B., Johns Hopkins University, 1892.—Resident House Officer, Johns Hopkins Hospital (1897-98); Chief of Medical Clinic, the Johns Hopkins Dispensary, and Physician, Baltimore.
- *DAVIS, WALTER S., S.B., Amherst College, 1893.—Resident House Officer, Johns Hopkins Hospital (1897-98).
- HAMBURGER, LOUIS PHILIP, A.B., Johns Hopkins University, 1893.—Resident House Officer, Johns Hopkins Hospital (1897-98); Graduate Student, University of Berlin, Germany (1898-99); Assistant in Medicine, Johns Hopkins Medical School, and Physician, Baltimore.
- HUNNER, GUY LE ROY, S.B., University of Wisconsin, 1893.—Resident House Officer, Johns Hopkins Hospital (1897-98); Assistant Resident Gynecologist, Johns Hopkins Hospital.
- LYON, IRVING PHILLIPS, A.B., Yale University, 1893.—Resident House Officer, Johns Hopkins Hospital (1897-98); Clinical Microscopist, New York State Pathological Laboratory; Instructor in Clinical Medicine, University of Buffalo; Physician, Buffalo.
- MACCALLUM, WILLIAM GEORGE, A.B., University of Toronto, 1894.—Resident House Officer, Johns Hopkins Hospital (1897-98); Resident Bacteriologist, Johns Hopkins Hospital (1899-1900); Assistant Resident Pathologist, Johns Hopkins Hospital; Assistant in Pathology, Johns Hopkins Medical School.
- MCBRYDE, CHARLES NEIL, S.B., University of South Carolina, 1891; M. S., Virginia Agricultural and Mechanical College, 1892.—Physician, Blacksburg, Va.
- MITCHELL, JAMES FARNANDIS, A.B., Johns Hopkins University, 1891.—Resident House Officer, Johns Hopkins Hospital (1897-98); Assistant Resident Surgeon, Johns Hopkins Hospital.
- NICHOLS, JOSEPH LONGWORTH, A.B., Harvard University, 1893.—Fellow in Pathology, Johns Hopkins University (1897-98); Graduate Student, University of Berlin, Germany.

* Deceased.

- OPIE, EUGENE LINDSAY, A.B., Johns Hopkins University, 1893.—Resident House Officer, Johns Hopkins Hospital (1897-98); Fellow in Pathology, Johns Hopkins University (1898-99); Assistant in Pathology, Johns Hopkins University.
- PACKARD, MARY SECORD, A.B., Vassar College, 1892; Harvard Summer School, 1893.—Resident House Officer, Johns Hopkins Hospital (1897-98); Physician to Kingsley House (College Settlement), Pittsburgh.
- PANCOAST, OMAR BORTON, S.B., Swarthmore College, 1893.—Resident House Officer, Johns Hopkins Hospital (1897-98); Resident Surgeon, Union Protestant Infirmary, Baltimore.
- PENROSE, CLEMENT ANDARIESE, A.B., Johns Hopkins University, 1893.—Resident House Officer, Johns Hopkins Hospital (1897-98); Physician, Baltimore.
- STRONG, RICHARD PEARSON, Ph.B., Yale University, 1893.—Resident House Officer, Johns Hopkins Hospital (1897-98); Assistant Surgeon, U.S.A., Manila, P.I.

1898

- BAER, WILLIAM STEVENSON, A.B., Johns Hopkins University, 1894.—Resident House Officer, Johns Hopkins Hospital (1898-99); Assistant Resident Surgeon.
- CALVERT, WILLIAM JEPHTHA, A.B., University of Kentucky, 1893.—Resigned position of Resident House Officer, Johns Hopkins Hospital, 1898; Lieut. and Assistant Surgeon, U.S.A., Manila, P.I.
- CASSIDY, PATRICK JOSEPH, A.B., Yale University, 1894.—Assistant Resident Physician, W. W. Backus Hospital, 1898-99; Physician, New London, Conn.
- COE, JOHN WILLIAMS, JR., Ph.B., Yale University, 1893.—Senior Assistant on House Staff of Presbyterian Hospital, New York (1898-99); Resident Physician.
- DAWSON, PERCY MILLARD, A.B., Johns Hopkins University, 1894.—Fellow in Physiology, Johns Hopkins University (1898-99); Assistant in Physiology.
- ELTING, ARTHUR WELLS, A.B., Yale University, 1894.—Resident House Officer, Johns Hopkins Hospital (1898-99); Assistant in Pathology, Albany Medical School, Albany, N. Y.
- FORD, WILLIAM WEBER, A.B., Adelbert College, 1893.—Resident House Officer, Johns Hopkins Hospital (1898-99); Fellow in Pathology, McGill University, Montreal, Canada.
- HASTINGS, THOMAS WOOD, A.B., Johns Hopkins University, 1894.—Resident House Officer, Johns Hopkins Hospital (1898-99); Surgeon on Hospital Ship "Maine."

- HERRICK, ALFRED BIRCH, A.B., Williams College, 1894.—Resident House Officer, Johns Hopkins Hospital (1898-99); Resident Physician, National Soldiers' Home, Washington, D. C.
- KNOX, JAMES HALL MASON, JR., A.B., Yale University, 1892 and Ph.D., 1894; A.M., Lafayette College, 1896.—Resident House Officer, Johns Hopkins Hospital (1898-99); Physician, Baltimore.
- LANGFELD, MILLARD, A.B., Johns Hopkins University, 1893.—Professor of Bacteriology, John A. Creighton Medical College, and Physician, Omaha, Neb.
- LIGHT, GERTRUDE, S.B., University of Wisconsin, 1894.—House Physician, The Randall's Island Hospitals for Children and Infants, New York (1898-99); Demonstrator of Pathology, Wisconsin College of Physicians and Surgeons, and Physician, Milwaukee, Wis.
- MADISON, JAMES DANIEL, S.B., University of Wisconsin, 1894.—Resident House Officer, Johns Hopkins Hospital (1898-99); Assistant Resident Physician, Danvers Insane Hospital, Danvers, Mass.
- MARSHALL, HARRY TAYLOR, A.B., Johns Hopkins University, 1894.—Resident House Officer, Johns Hopkins Hospital (1898-99); Fellow in Pathology, Johns Hopkins University.
- PERKINS, ROGER GRISWOLD, A.B., Union College, 1893, and Harvard University, 1894.—Resident Pathologist, The Lakeside Hospital, and Demonstrator of Pathology, Medical Department, Western Reserve University, Cleveland, O.
- PORTER, KATHERINE, A.B., Bryn Mawr College, 1894.—House Physician, New York Infirmary for Women and Children, New York (1898-99); Physician, Orange, N. J.
- PRATT, JOSEPH HERSEY, Ph.B., Yale University, 1894.—Assistant Pathologist, City Hospital, Boston.
- SANDS, GEORGINA, A.B., Vassar College, 1893; Graduate Student Barnard College (N. Y.), 1893-94.—Resident House Officer, Johns Hopkins Hospital (1898-99); Physician, Port Chester, N. Y.
- SCHENCK, BENJAMIN ROBINSON, A.B., Williams College, 1894.—Resident House Officer, Johns Hopkins Hospital (1898-99); Assistant Resident Gynecologist.
- STEINER, WALTER RALPH, A.B., Yale University, 1892, and A.M., 1895; Graduate Student, Johns Hopkins University, 1892-94.—Resident House Officer, Johns Hopkins Hospital (1898-99); Physician, Hartford, Conn.
- WALKER, EMMA ELIZABETH, A.B., Smith College, 1887.—Clinical Assistant, Hospital for Ruptured and Crippled, and Physician, New York (1898-99); Physician, New York City.
- WHITRIDGE, ANDREW HENDERSON, S.B., Harvard University, 1894.—Resident House Officer, Johns Hopkins Hospital (1898-99); Physician, Baltimore.

1899.

- BROWNELL, EDWARD ERLE, Ph.B., Yale University, 1895.—Resident House Officer, Johns Hopkins Hospital.
- BUCKLER, HUMPHREY WARREN, A.B., Johns Hopkins University, 1895.—Resident House Officer, Johns Hopkins Hospital.
- COLE, RUFUS IVORY, S.B., University of Michigan, 1896.—Resident House Officer, Johns Hopkins Hospital.
- DAVIS, JOHN STAIGE, Ph.B., Yale University, 1895.—Resident House Officer, Johns Hopkins Hospital.
- EMERSON, CHARLES PHILLIPS, A.B., Amherst College, 1894.—Resident House Officer, Johns Hopkins Hospital.
- EPER, BLANCHE NETTLETON, S.B., University of California, 1895.—House Physician, The Randall's Island Hospitals for Children and Infants, New York.
- ERLANGER, JOSEPH, S.B., University of California, 1895.—Resident House Officer, Johns Hopkins Hospital.
- EVANS, PHILIP SAFFERY, JR., A.B., Yale University, 1895.—Inter-collegiate Secretary, Y.M.C.A., Baltimore.
- FOLLIS, RICHARD HOLDEN, JR., Ph.B., Yale University, 1895.—Externe, Johns Hopkins Hospital and Dispensary.
- FULTON, FRANK TAYLOR, S.B., Knox College, 1894; A.B., Johns Hopkins University, 1895.—Pathological Interne, City Hospital, Boston, Mass.
- GALLAGHER, JAMES DATON, A.B., Johns Hopkins University, 1895.—Physician to the Private Wards, Lakeside Hospital, Cleveland, O.
- HARRIS, HENRY, A.B., Leland Stanford Jr. University, 1895.—Resident House Officer, Johns Hopkins Hospital.
- HOYE, HENRY JOSEPH, A.B., Brown University, 1895.—Surgical Interne, City Hospital, Boston, Mass.
- LADD, LOUIS WILLIAMS, A.B., Yale University, 1895.—Acting Assistant Resident Physician, Johns Hopkins Hospital.
- LITTLE, CHARLES SUMNER, A.B., Wabash College, 1894.—Physician, Evansville, Ind.
- LUETSCHER, JOHN ARTHUR, S.B., University of Wisconsin, 1895.—Resident House Officer, Johns Hopkins Hospital.
- LUPTON, FRANK ALLEMONG, S.B., Alabama Polytechnic Institute, 1891, and S.M., 1892; Graduate Student, Johns Hopkins University, 1893-94.—Physician, Auburn, Ala.
- LYNCH, FRANK WORTHINGTON, A.B., Adelbert College, 1895.—Assistant Resident Obstetrician, Johns Hopkins Hospital.
- MAGEE, CHESTER LEA, A.B. and A.M., Leland Stanford Jr. University, 1895-96.—Assistant Resident Physician, City Asylum, Bay View, Baltimore.

- MOORE, HUGH MILLER, S.B. and M.S., Miami University, 1895.—Physician, Oxford, O.
- OTTLEY, CHARLES WILLIAMS, A.B., Princeton University, 1893.—Travelling Secretary of Student Volunteer Movement for Foreign Missions, New York, N. Y.
- OWSLEY, PAUL OCTAVIUS, Ph.B., Yale University, 1895.—Assistant Resident Surgeon, St. Joseph's Hospital, Baltimore.
- PLEASANTS, JACOB HALL, JR., A.B., Johns Hopkins University, 1895.—Resident House Officer, Johns Hopkins Hospital.
- ROSENHEIM, SYLVAN, A.B., Johns Hopkins University, 1895.—Graduate Student, University of Berlin, Germany.
- SAMPSON, JOHN ALBERTSON, A.B., Williams College, 1895.—Resident House Officer, Johns Hopkins Hospital.
- STEENSLAND, HALBERT SEVERIN, S.B., University of Wisconsin, 1895.—Physician, Madison, Wis.
- STONE, WILLIAM RIDGELY, A.B., Princeton University, 1895.—Surgical Interne Blackwell's Island, Department of Charities, New York.
- STROBEL, EDGAR RANDOLPH, A.B., Johns Hopkins University, 1895.—Externe, Johns Hopkins Hospital and Dispensary; Physician.
- VERHOEFF, FREDERICK HERMAN, Ph.B., Yale University, 1895.—Externe, Johns Hopkins Hospital and Dispensary; Assistant Surgeon Baltimore Eye, Ear and Throat Charity Hospital.
- WILLIAMS, WILLIAM WHITRIDGE, A.B., Johns Hopkins University, 1895.—Resident Physician, Lakeside Hospital, Cleveland, Ohio.
- WYCKOFF, SARAH DELIA, S.B., Wellesley College, 1894.—Resident House Officer, Johns Hopkins Hospital.
- YATES, JOHN LAWRENCE, Ph.B., Yale University, 1894; S.B., University of Wisconsin, 1895.—Resident House Officer, Johns Hopkins Hospital.

GENERAL STATEMENT

The Medical Department of the Johns Hopkins University was opened for the instruction of students October, 1893. The School of Medicine is an integral and coördinate part of the Johns Hopkins University, and it also derives great advantages from its close affiliation with the Johns Hopkins Hospital.

The required period of study for the degree of Doctor of Medicine is four years. The instruction begins on the morning of the first Tuesday of October. Candidates for admission are required to be present on Friday and Saturday mornings in the week preceding the first Tuesday of October (see the Calendar, page 5). The graduating exercises are held on the second Tuesday of June. There are short recesses at Christmas and Easter.

The course of instruction is planned for the professional training of those who have received a liberal education, as indicated by a collegiate degree in arts or science, including a reading knowledge of French and German and adequate training in those branches of science, such as physics, chemistry and biology, which underlie the medical sciences. Men and women are admitted upon the same terms.

In the methods of instruction especial emphasis is laid upon practical work in the Laboratories and in the Dispensary and Wards of the Hospital. While the aim of the School is primarily to train practitioners of medicine and surgery, it is recognized that the medical art should rest upon a suitable preliminary education and upon thorough training in the medical sciences. The first two years of the course are devoted mainly to practical work, combined with demonstrations, recitations and lectures, in the Laboratories of Anatomy, Physiology, Physiological Chemistry, Phar-

macology and Toxicology, Pathology and Bacteriology. During the last two years the student is given abundant opportunities for the personal study of cases of disease, much of his time being spent in the Hospital Wards and Dispensary and in the Clinical Laboratories.

Upon graduation twelve members of the class are appointed to serve for one year as resident internes in the Johns Hopkins Hospital, and in addition a certain number are offered the opportunity of serving as externes in the Hospital and Dispensary.

Inquiries may be addressed to the Dean of the Johns Hopkins Medical School.

REQUIREMENTS FOR ADMISSION

As candidates for the degree of Doctor of Medicine the school receives:

I. Those who have satisfactorily completed the Chemical-Biological course which leads to the A. B. degree in this university.

II. Graduates of approved colleges or scientific schools who can furnish evidence: (a) That they have acquaintance with Latin and a reading knowledge of French and German; (b) That they have such knowledge of physics, chemistry, and biology as is imparted by the regular minor courses given in these subjects in this university.

BIOLOGY.—In explanation of the character and amount of the requisite training indicated by the term "Minor Course" in these sciences, it may be stated, with respect to Biology, that the candidate should have followed for at least a year a laboratory course in the structure, life-history, and vital activities of selected types of animal and vegetable life. In the Chemical-Biological course for undergraduates in this university the laboratory work in Biology (minor course) at present includes the study of such types as *amœba*, *hæmatococcus*, yeast, *penicillium*, bacteria, mushroom, hydra, vorticella, a fern, a flowering plant, the earthworm, lobster, anodon; the gross and minute anatomy of the frog, the develop-

ment of its eggs, the structure, formation, and metamorphoses of the tadpole; dissection of a mammal; the field and laboratory study of some few flowering plants. The laboratory work is the more important part, the lectures and other exercises subsidiary. It is, of course, not to be understood that this curriculum of biological work must be rigidly followed. Courses in botany and zoology will be accepted as equivalent to the minor course in biology in this university, provided the work in the laboratory has been adequate. It is important that the candidate should show ability to observe natural objects, to record the observations in words and by drawings, and to use the microscope.

CHEMISTRY.—The candidate should have followed a course in general Chemistry for at least a year. This course should include laboratory work, about five hours a week through one year, and lectures and class-room work covering the outlines of inorganic chemistry and the elements of organic chemistry. A good knowledge of the subject as presented in Remsen's "Introduction to the Study of Chemistry" may be regarded as the minimum requirement. A fuller knowledge of Chemistry is desirable.

PHYSICS.—In Physics, the candidate should have followed a collegiate course for at least one year. This should include four hours a week of class-room work and at least three hours a week of quantitative work in the laboratory. Special attention should be given to theoretical mechanics and to the mechanical and electrical experiments.

LATIN.—The candidate should have studied Latin grammar and should possess at least such knowledge of the language as may be acquired by reading four books of Cæsar or their equivalent.

III. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved college or scientific school, and the knowledge of French, German, Latin, physics, chemistry, and biology above indicated.

APPLICATION BLANKS.—Application for admission should be made to the Dean, who will furnish blanks to be filled out and returned to him, relating to the previous courses of study of the applicant.

CERTIFICATES.—Applicants are required to furnish certificates from officers of the colleges or scientific schools where they have studied, as to the courses pursued in physics, chemistry, and biology.

EXEMPTION FROM ENTRANCE EXAMINATION.—Those who possess a degree in arts or science from an approved college or scientific school, and in addition furnish satisfactory certificates concerning their training in physics, chemistry and biology, with evidence of acquaintance with Latin and a reading knowledge of French and German, are admitted without examination.

APPLICANTS WITHOUT A COLLEGIATE DEGREE.—Candidates who have not received a degree in arts or in science from an approved college or scientific school will be required (1) to pass, at the beginning of the session in October, the examinations for matriculation in the collegiate department of the Johns Hopkins University, (2) then to pass examinations equivalent to those taken by students completing the Chemical-Biological course that leads to the A.B. degree in this University, and (3) to furnish satisfactory certificates that they have had the requisite laboratory training as specified above.

SPECIAL WORKERS.—Special workers, not candidates for a degree, will be received at the discretion of the Faculty.

ADMISSION TO ADVANCED STANDING

Applicants for admission to advanced standing must furnish evidence (1) that the foregoing terms of admission as regards preliminary training have been fulfilled, (2) that courses equivalent in kind and amount to those given here, preceding that year of the course for admission to which application is made, have been satisfactorily completed, and (3) must pass examinations at the beginning of the session in October in all the subjects that have been already pursued by the class to which admission is sought. Certificates of standing elsewhere cannot be accepted in place of these examinations. The applicant must have studied as a matriculated medical student in an approved medical school for a period of time at least equal to that already spent by the class which he seeks to enter.

GENERAL PLAN OF INSTRUCTION

As the student upon entrance must bring from the collegiate training a good knowledge of physics, general chemistry, and general biology, these subjects do not form a part of the curriculum of this medical school. The study of these sciences is justly considered an essential part of a thorough medical education, but it can be pursued to greater advantage during the period of preliminary training in the college or university than in a medical school.

The first two years of the medical course are devoted mainly to the fundamental medical sciences, the larger part of the time being spent in practical work in the Laboratories. In the last two years, medicine, surgery, obstetrics, and the various specialties are studied in the Dispensary, the Wards of the Hospital, and the Clinical Laboratories.

The principal studies of the first year are human anatomy, histology, microscopic anatomy, embryology, physiology, and physiological chemistry.

The study of anatomy and of physiology is continued in the second year. In this year general pathology, pathological anatomy and histology, pharmacology, and toxicology are studied. A practical course in bacteriology, with the chief emphasis upon its hygienic and medical bearings, is given during the first three months of this year. During the last six weeks of the second year the student is instructed in the ordinary methods of physical examination of the thorax and abdomen, as an introduction to the clinical work of the succeeding years.

The courses are so arranged as to secure in large measure concentration of attention upon single or closely allied subjects.

Upon the basis of thorough training in the fundamental

medical sciences, pursued during the first two years of the course, the student should now be well fitted to undertake the study of practical medicine and surgery.

During the third year the general principles of medicine, surgery and obstetrics are studied, and clinical instruction in medicine and surgery is given. A course in dietetics and practical therapeutics is given. The study of certain special branches of medicine is also begun. Instruction is given in clinical neurology and in the use of the ophthalmoscope. Leading features of the work of this year are the courses in the Clinical Laboratories and practical work in the Dispensary.

During the fourth year the practical study of medicine, surgery, and obstetrics is continued, and instruction is given in gynecology and the various special branches of medicine and surgery, viz.: dermatology, diseases of children, genito-urinary diseases, laryngology and rhinology, ophthalmology and otology, and psychiatry. In this year the students serve as clinical clerks and surgical dressers in the wards of the Hospital and are in daily attendance upon special classes in the Dispensary. They also attend cases of labor in the obstetrical wards of the Hospital, and, under proper supervision, in the homes of patients. For the ward and dispensary work the class is divided into small groups. The arrangement of the work during the third and fourth years is such that each student is given excellent opportunities for the direct personal examination of patients in the Dispensary and Hospital.

Instruction in hygiene, forensic medicine, medical zoology and medical history is provided during the course.

Work in the dissecting room, in the laboratory, and at the bedside, demonstrations, clinics, lectures, and recitations are the main features of the methods of instruction. Purely didactic lectures occupy a subsidiary position, as compared with instruction by recitations and demonstrations and especially by practical work in the various laboratories, in the Hospital wards, and in the Dispensary. In

consequence of the high standards of admission and attainment, the classes are not likely to be excessively large, and abundant opportunity is therefore afforded for practical work for each student and for personal contact between teacher and student.

LABORATORIES

The Anatomical Laboratory occupies the Women's Fund Memorial Building, which was erected in 1894 upon a large plat of ground owned by the University opposite the Hospital. It is a commodious building, 100 feet long, 60 feet wide and three stories high, constructed especially to accommodate the various anatomical laboratories. In the basement there is a modeling room, a machine shop, an embalming room, and a cold-storage plant for the preservation of bodies for dissection. The first floor, fitted up especially to teach histology to beginners, has in addition a small museum, a study room, and a room for animal experimentation. On the second floor there is a large lecture room, a research laboratory and photographic rooms. On the third floor there are ten dissecting rooms of varying size, all well lighted, thus affording the best opportunities for practical anatomy. As the rooms are now arranged there is an abundance of space for two hundred students to dissect at the same time. In the attic there are numerous store rooms and a large room fitted up for the preparation of skeletons. The laboratory is well equipped, and there are a number of private rooms for the use of instructors and research students.

The Laboratories of Physiology, of Physiological Chemistry and of Pharmacology occupy separate floors in a large building erected in 1898-99 on a lot adjoining the Women's Fund Memorial Building. This building contains three stories in addition to the basement and garret. It has an L-shape, and on each floor the available floor

space is equal to about 8500 square feet. The basement is arranged to contain some of the animal rooms, sundry special rooms for storage, a kitchen, a restaurant, cloak room and closets for men, a hall for bicycle racks, and a general post-office. On the first floor there is a library, for the use of students and teachers, containing books and periodicals pertaining to anatomy, histology, physiology, physiological chemistry, pharmacology, and pathology. Adjoining the library is a reading room. On the same floor are rooms for the Dean and Registrar, a sitting room for women, and a large auditorium. The second floor is given up to physiology, the third to pharmacology and physiological chemistry. Each of these floors has its own lecture room, students' laboratory, research rooms for advanced students, and private laboratories and offices for members of the staff. The laboratories are generously equipped for instruction and research, each being provided also with an electrical outfit for power, lighting and projection work.

The Pathological Laboratory is a four-story building on the grounds of the Hospital. This building contains the morgue and the autopsy theatre, the pathological museum, and rooms for instruction and research in bacteriology, pathological anatomy and histology, and experimental pathology. The class rooms are commodious and well lighted. There is ample supply of material for study in all departments of pathology and in bacteriology.

The Clinical Laboratory occupies two stories added in 1896 to one of the Hospital buildings. The funds contributed for this were a generous gift to the Hospital. This laboratory contains two large class rooms for students of the third and fourth years, respectively, and several smaller rooms for special departments of practical medicine and surgery and for the director, assistants, and special workers. Here the students are taught during the last two years of the course the physical, chemical, microscopical, and bacteriological methods of studying the blood, secretions, para-

sites, and morbid products with direct relation to their bearings on diagnosis and other practical aspects of clinical medicine and surgery.

CLINICAL OPPORTUNITIES

Abundant and varied clinical material is afforded by the Johns Hopkins Hospital and Dispensary. The Medical Department of the University is in close connection with this large and well-equipped Hospital and derives signal advantages from the resources of this institution. Professors in the Medical School, with their assistants, have entire charge of the practice in the Hospital and the Dispensary, which furnish ample material for clinical instruction in the various branches of medicine and surgery, including the specialties. The lying-in department of the Hospital, which was opened in 1896, is in successful operation. This, together with the out-patient obstetrical service, supplies good opportunities for practical training in obstetrics. The clinical amphitheatre and operating rooms are in the Hospital buildings.

Especially advantageous for thorough clinical training are the arrangements by which the students, divided into groups, engage in practical work in the Dispensary, and throughout the fourth year serve as clinical clerks and surgical dressers in the wards of the Hospital, as will be explained subsequently.

Practical instruction in mental diseases is given by the Clinical Professor of Psychiatry in the City Asylum at Bay View.

MICROSCOPES

The character of the practical work requires that each student, during each year of the course, shall be supplied with a microscope, and every student is recommended to

purchase one. Each student who does not possess a microscope is furnished at a yearly rental with one, which he retains for his own use throughout the academic year.

LIBRARIES

The University Library contains 92,000 volumes selected in recent years with reference to the instruction here given. It is arranged in several collections.

The works relating to medicine are placed in special libraries in the main building of the Hospital and in the new Medical School building, and are readily accessible to students and to the workers in the laboratories. The leading medical periodicals of the world are regularly received and complete sets of the more important journals are on the shelves.

Other libraries of Baltimore are the Peabody (135,000 volumes), the Pratt (190,000 volumes), the Medical and Chirurgical (12,000 volumes), the New Mercantile (60,000 volumes).

Washington is so near that its libraries and museums may be easily visited. Among the chief institutions of interest to students are: The Smithsonian Institute and National Museum, the Library of Congress, the Army Medical and Surgical Museum, the Library of the Surgeon-General's Offices, the Libraries of the Departments and Bureaus.

MEDICAL SOCIETIES

Three associations, the Hospital Medical Society, the Historical Club, and the Journal Club meet in the Assembly Room of the Hospital, one on each Monday evening throughout the academic year and are open to students.

PUBLICATIONS

The Bulletin of the Johns Hopkins Hospital, issued monthly, and now in the eleventh year of its publication, contains articles by those connected with the Medical School and Hospital and the proceedings of the Hospital Societies. The Johns Hopkins Hospital Reports, of which eight volumes have been issued, contain the larger monographs and results of researches in the Hospital and the Pathological and Clinical Laboratories.

DEPARTMENTS OF INSTRUCTION

The following statements are designed to exhibit the opportunities and the character of the instruction and practical work in each department.

ANATOMY

FRANKLIN P. MALL, M.D., Professor of Anatomy
ROSS G. HARRISON, Ph.D., M.D., Associate Professor of Anatomy
CHARLES R. BARDEEN, M.D., Associate in Anatomy
J. WILLIAMS LORD, M.D., Instructor in Anatomy
HENRY MCE. KNOWER, Ph.D., Instructor in Anatomy
MERVIN T. SUDLER, Ph.D., Assistant in Anatomy
JOHN M. T. FINNEY, M.D., Associate Professor of Surgery

Courses of instruction are provided in the various anatomical sciences—systematic human anatomy, histology, microscopic anatomy and embryology—and opportunities are afforded for advanced work and original investigation in these sciences. It is possible for the student to devote about two-thirds of his time during the first year and one-third during the second to the study of anatomy.

The courses in histology and microscopic anatomy are completed during the first year. That in systematic anatomy begins in October of the first year with osteology, and continues with dissections during the first and second years. In addition to the required courses in osteology, histology and gross and microscopic human anatomy (Courses I, II, V and VII), there are elective courses in which students may, by arrangement with the instructors, do either additional or more advanced work along lines that particularly interest them or that will prepare them for some prospective study. Physicians and special students with the requisite training may be admitted to the courses by special

arrangement with the instructors, and may undertake advanced work and original research. During the past two years fully one-third of all students' work has been done in the elective courses and in many instances the elective work has been much more than this.

I. OSTEOLGY. Professor Harrison, October 1 to November 15, afternoons daily. This course, which is introductory to Course II, consists of laboratory work, lectures and demonstrations. In the laboratory the human skeleton is studied and the student makes accurate drawings of the bones and joints, or models them in clay. In the lectures facts from embryology and comparative anatomy are brought to bear upon the subject, when they are calculated to be of special interest or assistance to the student. A complete human skeleton is loaned to each two students and may be retained until June 1.

II. SYSTEMATIC HUMAN ANATOMY. Professor Mall and Professor Harrison, November 15 to March 15, daily. This course consists of practical work in the laboratory, and it is required that during the course each student shall make at least one complete dissection of the human body. In order to do this the majority of students find it necessary to follow this course for two seasons.

The material for the course is carefully embalmed, and kept in a cold storage vault, so that there is always an adequate supply on hand when needed. For the purpose of distributing the material each half of the body is marked off into three parts, viz.: head and neck, including the thoracic viscera; upper extremity and thoracic walls; and lower extremity, including the abdominal wall and viscera. The student begins with the dissection of one of the extremities, and it is usual to complete both before the dissection of the head is begun.

The main object of the work is to make a careful study of the human body as a mechanism, showing at the same time the adaptation of the constituent parts of the organism to the performance of their functions. The work of the stu-

dents is independent, but it is systematic and thorough. Students are encouraged to make drawings of their dissections, with notes, and to record all variations from the normal as described in the text-books.

III. REGIONAL ANATOMY. Professor Mall, January 1 to March 15, mornings. Students who have completed the required work in anatomy may undertake regional dissections or may make special dissections and preparations.

IV. CONFERENCES IN ANATOMY. Professor Lord, November 15 to March 15, Tuesday and Thursday afternoons, 4 p. m. The conferences in gross anatomy are systematic and progressive before the Christmas recess; after that there is a conference each week on each of the three parts to correspond with the division of the work in systematic anatomy.

V. HISTOLOGY AND HISTOGENESIS. Drs. Bardeen, Sudler and Knower, October 1 to November 15, mornings. This course consists, in the main, of practical work in the laboratory supplemented by a series of morning lectures with recitations, demonstrations and exhibition of charts and models. The different simple tissues are studied by a variety of methods, considerable stress being laid upon the examination of fresh tissues and of frozen sections, unstained as well as stained. Comparisons are made with developing tissues and with those of lower forms of living beings.

VI. MACROSCOPIC ORGANOLOGY. Drs. Bardeen, Sudler and Knower, Monday mornings, November 15 to February 1. The aim of this course is to lead the student gradually from the appearances noted in general dissection up to the point at which to make further progress in the study of the tissues the naked eye becomes insufficient and the microscope must be employed. It is transitional, therefore, between gross systematic anatomy, as studied in the dissecting room, and microscopic anatomy. The attempt is made to train the student in close scientific observation and objective description by attention to such appearances as size, form, color, consistence, weight, etc.

Processes of dissection with delicate instruments, dissociation, maceration, corrosion, putrefaction, injection, digestion, etc., are used. The practical work is accompanied by lectures and demonstrations. This course is carried on in connection with Course VII.

VII. MICROSCOPIC ORGANOLOGY. Drs. Bardeen, Sudler and Knowler, November 15 to February 1, Wednesday and Friday mornings. The student, having gone as far into the architecture of the organs as the unaided eye will take him, uses first low powers and later high powers of the microscope in order to determine the mode in which the elementary tissues are united to form organs. He is taught to search for and detect morphological units between the organs and the elementary tissues. When of advantage tissues from the embryo and from animals other than man are introduced. The organs of the circulatory, hæmopoetic, digestive, respiratory, uropoetic, and genital systems are successively studied. The subsequent work in physiology and pathology as well as the standpoint of modern anatomy are kept in view in the study of this subject.

During three forenoons of the week the members of the class work immediately under direction. The laboratory is, however, open throughout the week, so that students may do extra work without direct instruction. Informal lectures, illustrated by charts, models, dark-room projections, and demonstrations, accompany the practical work.

VIII. NEUROLOGY. Drs. Bardeen, Sudler and Knowler, February 1 to March 15, Monday, Wednesday and Friday mornings. The work consists in the main of practical exercises in the laboratory and begins with the study of the sense organs. The skin, the nose, the eye, and the ear are successively studied by dissection and by the microscope. The macroscopic morphology of the central organs is next considered, after which the student examines and draws a series of sections, stained by Weigert's methods, taken at various levels through the spinal cord, the medulla oblongata, pons, cerebellum, mid-brain and cerebral hemispheres.

The various groups of neurones concerned in centripetal and centrifugal conduction are separately considered. An attempt is made to make clear, as far as they are known, the anatomical mechanisms underlying the various reflex, instinctive, and voluntary activities. In addition to the methods of Weigert and Golgi, those of Marchi, Flechsig, and Nissl are utilized in various stages of the course. The practical work is accompanied by a series of illustrative lectures.

IX. TECHNIQUE OF HISTOLOGY AND MICROSCOPIC ANATOMY. Dr. Sudler. In this special course opportunity is afforded to those who wish to extend their knowledge of methods beyond the technical procedures learned in connection with the preceding courses. The student is taught the best methods of examinations of tissues in the natural state, and of preserving material for later study. Methods of dissociation, corrosion, injection, embedding, staining, sectioning, reconstruction, etc., may be learned. Especial training in particular departments, as in the modern methods of neurological investigation, is available for those prepared to engage in such work.

X. ANATOMY AS APPLIED TO SURGERY. Professor Finney, January 1 to March 15, Wednesday and Friday afternoons. This course is intended especially for students in the third year. The different regions of the body are successively considered in their topographical relations with especial reference to the surgical operations that may be performed upon them. The course is illustrated by specimens and by special dissections.

XI. SPECIAL COURSE IN HISTOLOGY FOR PHYSICIANS. Dr. Sudler, April 1 to May 1, afternoons. A special preliminary course in Histology is given for those who may not be adequately prepared to follow the laboratory courses in Pathology, Bacteriology, and Clinical Microscopy provided during May and June for physicians (see Part II).

XII. ADVANCED WORK AND ORIGINAL INVESTIGATION. Professor Mall, Professor Harrison, and Dr. Bardeen,

daily. The laboratory has been especially equipped for the work of investigation as well as for teaching, and the modern machines and apparatus likely to be needed have been provided. Rooms and apparatus for animal experimentation, mechanisms of convenience for drawing and reconstruction, projection apparatus, photomicrographic outfit, and apparatus for work at low temperatures are at hand. A large collection of serial sections through human and animal embryos of different ages is available in connection with research in human embryology, and sets of serial sections, coronal, horizontal and sagittal, through the human rhombencephalon and cerebrum may be used by investigators in neurology. Facilities are afforded for the artistic illustration and publication of the results of researches leading to discoveries of importance. Every encouragement is given to suitably trained and endowed individuals who desire to undertake original investigation either under direction or independently.

PHYSIOLOGY

WILLIAM H. HOWELL, Ph.D., M.D., Professor of Physiology

GEORGE P. DREYER, Ph.D., Associate in Physiology

PERCY M. DAWSON, M.D., Assistant in Physiology

JOSEPH C. HERRICK, A.B., Fellow in Physiology

The course in Physiology extends from January of the first year to January of the second year. By this arrangement of the course the student is enabled to make considerable progress in Anatomy and Histology before beginning his work in Physiology.

The work consists of a systematic course of lectures covering the subject of animal physiology, experimental work in the laboratory, demonstrations, and recitations. The lectures are fully illustrated by experiments and demonstrations given in the lecture room. Weekly recitations are held upon the subject-matter covered by the lectures and laboratory work.

The laboratory course is arranged to occupy six hours a

week for about twelve weeks. In this course the students are required to perform a selected list of experiments, about twenty-five in number, that have been chosen partly to illustrate laboratory methods in physiology, and partly to enable the student to prove for himself certain fundamental facts in physiology. These experiments are confined mainly to muscle-nerve physiology and the physiology of the circulation, but include also a few experiments in respiration and vision. Each student is required to perform, under the immediate supervision of an instructor, at least two kymograph experiments upon a mammal, in which the physiological influence of sensory nerves upon the heart-rate, blood-pressure and respiration is especially studied. An examination upon these kymographic records constitutes a part of the final examinations in physiology. The laboratory work is intended not only to give an idea of the methods used in experimental physiology, but also to furnish that basis of actual acquaintance with facts which is necessary for intelligent reading.

In addition to the foregoing exercises, which comprise the required work, students are given opportunities to participate in the more advanced courses, intended primarily as graduate work. These courses are as follows: A physiological journal club meets weekly to discuss the recent literature in animal physiology and histology. A physiological seminary meets weekly during the year. The object of the seminary work is to study carefully by means of lectures or readings some special part of physiology, the topics chosen varying each year. An advanced course of laboratory work is arranged,—intended to teach the methods of physiological demonstration and research. This course is under the control of the professor of physiology, and is not limited as to time or amount of work, with the exception that assistance from the professor must be arranged for by definite engagements. It is designed for those who expect to become teachers or investigators in physiology, pathology, or pharmacology, and the number

permitted to take it is necessarily limited. For purposes of research the laboratory is well equipped.

PHYSIOLOGICAL CHEMISTRY

JOHN J. ABEL, M.D., Professor of Pharmacology

WALTER JONES, Ph.D., Associate in Physiological Chemistry and Toxicology

Instruction in this branch is given by laboratory work, lectures, demonstrations, and conferences of a less formal character. The work in the laboratory begins the first of March and continues, with daily exercises, until the end of the first year of the course.

I. LABORATORY WORK. (a) A short preliminary course on the chemistry of various substances, such as proteids, which are usually not familiar to the student of pure chemistry but which should be understood in order that he may intelligently execute the work that follows. Here also an acquaintance is made with such processes as dialysis, centrifugation, and salting, which are more or less confined to laboratories of physiological chemistry.

(b) A course of qualitative analysis in which some examination is made of nearly every tissue and fluid of the body. Blood, liver, milk (colostrum), muscle, gastric juice, adipose tissue, bone and bile receive special attention, and whenever material is available a study is made of pathological fluids and concretions. The chemical constituents of these tissues and fluids are isolated and identified, and such of their chemical reactions shown as throw light on the possible origin or disappearance of the compounds in the organism. The object of this course is not only to acquire familiarity with the chemical substances that can be isolated from the animal body, but to gain possession of rapid and precise methods of physiological chemical manipulation so useful in the subsequent study of practical medicine.

(c) A study of those physiological chemical processes that can be closely imitated outside of the body, as the action of enzymes, salivary, pancreatic and gastric digestion.

(d) Class experiments. Demonstrations by the instructor in which the entire class usually takes part. Comparative examination of blood spectra with the microspectroscope, polarimetric measurements, experiments upon animals, etc.

(e) Quantitative analysis. Determination of normal and pathological constituents of urine; analysis of milk, gastric juice, stomach-washings, air, water, and foods.

(f) Examination of the fæces with special reference to putrefactive processes.

II. CONFERENCES. Informal conferences are held at which the laboratory work is discussed and the progress and needs of the students are considered. Here also the late literature that bears directly upon the work is reviewed.

III. LECTURES. A brief survey of the entire province of physiological chemistry. Emphasis is given to that part of the subject which for obvious reasons must be omitted from a laboratory course. Various theories are discussed and structural relations also receive attention whenever they promise to throw light on animal metabolism.

TOXICOLOGY, PHARMACOLOGY, AND PRACTICAL THERAPEUTICS

JOHN J. ABEL, M.D., Professor of Pharmacology

REID HUNT, Ph.D., M.D., Associate in Pharmacology

WALTER JONES, Ph.D., Associate in Physiological Chemistry and Toxicology

HENRY B. JACOBS, M.D., Instructor in Medicine

ALBERT C. CRAWFORD, M.D., Assistant in Pharmacology

J. LEE WALZ, Ph.G., Assistant in Pharmacy

Instruction in these branches is given mainly in the second year of the course by illustrated lectures and laboratory work two afternoons a week from January 1 to June 1, and in addition one recitation a week is held. Dr. Henry B. Jacobs, Instructor in Medicine, conducts a course in Practical Therapeutics in the third year.

Toxicology

The work in this subject covers eight weeks, the actual work of detecting poisons being preceded by a short course in experimentation on anæsthetized animals in which the phenomena and general principles of intoxications are set forth. This preliminary course, partly physiological and partly chemical in character, is also of such a nature as to constitute the best introduction to the subject of Pharmacology. Some of the points illustrated in this preliminary course are the rapidity of dispersion of drugs throughout the body, the paths of elimination for drugs, the storage of drugs in the various tissues and organs, the varied symptoms of poisoning, changes in the blood, the grosser lesions produced by powerful poisons, and the chemical changes effected in the drug itself in its passage through the body. The general principles of toxicological analysis are then illustrated by actual practice in the laboratory, the following outline showing the ground which is usually covered:

(a) Search for volatile substances by distillation with steam under various conditions, and by analytical methods applicable to the detection of minute quantities of this class of poisons.

(b) Search for alkaloids and glucosides by modifications of the methods of Dragendorff, Brouardel, Kippenberger, and others. Mixtures of alkaloidal poisons and foods are subjected to some process of extraction suitable to the case.

(c) Search for metallic poisons and non-volatile acids. Several of the best methods for the destruction of organic matter are illustrated before the class, and material for individual study is thus prepared. Arsenic, antimony, lead, and mercury are considered in detail, and the student is required to give satisfactory proof of the presence of these poisons in materials which are submitted to him.

(d) A study of blood stains, and the separation of blood from rust spots, etc. A spectroscopic and chemical study is made of the various hæmoglobin derivatives, as methæ-

moglobin, hæmatin, reduced hæmatin, hæmatorporphyrin, etc.

(e) A study of the changes in the urine induced by drugs.

Pharmacology

The remainder of the year is devoted to the study of the pharmacological action of drugs. The course in Pharmacology is in part a laboratory course, students working in sections of four or a less number according to the nature of the experiment.

The practical work in experimentation on anæsthetized animals includes such topics as the action of drugs on the heart, vessels and vasomotor apparatus, on the respiratory apparatus, the eye, brain and spinal cord, voluntary muscles, kidneys, salivary and sweat glands, intestine, etc. The chemical side of Pharmacology also receives due attention. The fate of drugs in the organism, their influence on the metabolism of the body and the manner of their excretion are fully treated in lectures and illustrated wherever practicable.

Pharmacy

Pharmacy is treated by Mr. J. L. Walz, Ph.G., in a course of demonstrations and lectures. Weights and measures, incompatibles, special points relating to prescriptions and the officinal pharmacopœial preparations are fully dealt with. The more important preparations are made before the class.

Practical Therapeutics

In the third year on two afternoons of the week a course in Practical Therapeutics, consisting of lectures and demonstrations, is given by Dr. Henry B. Jacobs. Use is made, for purposes of illustration, of cases from the wards of the Hospital.

The course comprises the study of a number of the more common and useful drugs, their dosage, administration and

effects, methods of prescription writing and illustrative formulæ, demonstrations of practical therapeutic measures, the use of hydrotherapy and massage, the preparation of simple and useful forms of diet, the care of patients considered from the nursing point of view, the treatment of various emergencies, and of special diseases by climate, rest, and other practical procedures.

The clinical work of the third and fourth years affords abundant opportunities for further training in practical therapeutics.

PATHOLOGY AND BACTERIOLOGY

WILLIAM H. WELCH, M.D., Professor of Pathology
LEWELLYS F. BARKER, M.B., Associate Professor of Pathology
NORMAN MACL. HARRIS, M.D., Assistant in Bacteriology
WILLIAM G. MACCALLUM, M.D., Assistant in Pathology
EUGENE L. OPIE, M.D., Assistant in Pathology
HARRY T. MARSHALL, M.D., Fellow in Pathology

General and Special Pathological Anatomy and Histology, General Pathology, and Bacteriology are taught by laboratory work, demonstrations, recitations, and lectures. These courses continue throughout the second year. The laboratory work occupies three half-days a week during the year.

I. THE CONDUCT OF AUTOPSIES. Professor Barker and Dr. MacCallum. The autopsies are made in the Pathological Building and are witnessed by the students of the second, third and fourth years. Students are permitted to assist at post-mortem examinations and are instructed in the methods of making such examinations and of recording in proper protocols the results.

II. DEMONSTRATIONS IN GROSS MORBID ANATOMY. Professor Barker, Saturdays, 11-1, throughout the year. The gross morbid specimens, collected during the week, are demonstrated to students of the second, third and fourth years. In addition fresh and museum specimens are exhibited in the course in Pathological Histology to illus-

trate the macroscopical appearances of the morbid conditions studied by the microscope.

III. BACTERIOLOGY. Professor Welch and Dr. Harris, October 1 to Christmas, Monday, Wednesday and Friday afternoons. This is a practical laboratory course in which the students become familiar with the preparation of culture media, the principles of sterilization and disinfection, the methods of cultivating, staining, and studying bacteria, the biological examination of air, water, and soil, and the important species of known pathogenic microorganisms. The hygienic, as well as the pathological, relations of bacteriology are considered.

IV. LECTURES ON INFECTION AND IMMUNITY. Professor Welch, October 1 to Christmas, once or twice weekly. During the months of practical work in bacteriology, weekly lectures are given devoted mainly to the consideration of subjects pertaining to infection and immunity.

V. GENERAL PATHOLOGY. Professor Welch, Professor Barker and Dr. MacCallum. This subject is covered as far as practicable by demonstrations, experiments, and laboratory work. Aspects of the subject not susceptible of this demonstrative treatment are taken up in lectures and recitations.

VI. PATHOLOGICAL HISTOLOGY AND PATHOLOGICAL ANATOMY. Professor Welch, Professor Barker and Dr. MacCallum, January 2 to June 1, Monday, Wednesday and Friday afternoons. Pathological Histology is taught as a part of Pathological Anatomy, the description and demonstration of gross lesions being followed by microscopical examination of the same lesions. The course begins with the study of inflammation, and in regular order the pathological anatomy and histology of the different tissues and organs of the body are taken up. Microscopical sections are given to be stained, mounted, and carefully studied and drawn. Instruction in the technique of making pathological examinations, including the methods of pathological histology, and practice in pathological diagnosis are afforded.

VII. RECITATIONS. Professor Welch, Mondays at 12 throughout the year. Weekly recitations cover the ground gone over by the students in their laboratory work, as well as subjects treated in lectures and those reserved more especially for text-book study.

VIII. LECTURES ON SPECIAL TOPICS IN PATHOLOGY. Professor Welch, January to June, once or twice weekly. Didactic and demonstrative lectures are given upon subjects which cannot be satisfactorily treated in the laboratory.

IX. COURSES IN PATHOLOGY AND IN BACTERIOLOGY FOR PHYSICIANS. During the months of May and June special laboratory courses in these subjects are provided for physicians (see Part II, p. 103). In addition opportunity is afforded to a limited number of suitably trained physicians to follow the undergraduate courses in Pathology and Bacteriology.

X. ADVANCED WORK AND SPECIAL RESEARCH. Opportunity is afforded to those suitably trained to pursue advanced work and special research in Pathological Anatomy and Histology, Experimental Pathology, and Bacteriology. For these purposes the Pathological Laboratory is well equipped with the necessary apparatus and material.

MEDICINE (INCLUDING CLINICAL MICROSCOPY)

WILLIAM OSLER, M.D., Professor of Medicine

WILLIAM S. THAYER, M.D., Associate Professor of Medicine

THOMAS B. FUTCHER, M.B., Associate in Medicine

FRANK R. SMITH, M.D., Instructor in Medicine

HENRY B. JACOBS, M.D., Instructor in Medicine

JESSE W. LAZEAR, M.D., Assistant in Clinical Microscopy

THOMAS MCCRAE, M.B., Instructor in Medicine

NORMAN B. GWYN, M.B., Demonstrator in Clinical Microscopy

LOUIS P. HAMBURGER, M.D., Assistant in Medicine

The teaching is in the Dispensary, in the Clinical Laboratory, and in the Wards. In place of systematic didactic teaching there has been introduced a plan of practical instruction by which the student is brought directly in con-

tact with the patients, and taught from the outset how to recognize and treat disease as it occurs in nature, not in books.

PRELIMINARY COURSE IN AUSCULTATION AND PERCUSSION. Dr. Thayer, April 15 to June 1, Tuesdays and Saturdays, 10 to 12. This course is designed for students of the second year, and includes the theory and the methods of percussion and auscultation of normal organs, especial attention being paid to topographical percussion. It is intended that the students shall be made familiar with the ordinary methods of physical exploration of the thorax and abdomen in order that they may be ready to proceed intelligently with their third year work in physical diagnosis.

The work of the Third Year is as follows:

I. PHYSICAL DIAGNOSIS. This is in charge of Dr. Thayer, with the assistance of Drs. Jacobs, McCrae and Hamburger. Instruction is given in the topographical anatomy of the viscera, in the taking of histories, in auscultation and percussion, and in other routine methods of physical exploration.

The class is divided into four sections in order that the students may have better opportunity for the personal study of the patients. Each student has two hours a week of practical clinical work, while once a week there is a recitation attended by the entire class. The course is made as practical as may be.

II. GENERAL SYMPTOMATOLOGY OF DISEASE. At twelve o'clock on Tuesdays, Thursdays and Saturdays Dr. Osler meets the students in the class room adjoining the Dispensary. The students in rotation examine selected cases. The teaching consists in (*a*) thorough consideration of the clinical features of the case; (*b*) brief discussion of the symptoms; (*c*) reports by each student upon the cases which he examines and whose further progress he follows either by personal visits outside or, if the patient is admitted to the Hospital, by observation in the wards; (*d*) on the last class day of each month a clinical "round-up," when the

student, whose turn it happens to be, reports on the work of the month; (e) short papers on definite themes given to the students relating to subjects which come up in the course of the examination of patients. These "five-minute" papers on various topics familiarize the student with the literature, and very often prove most instructive to the class and indeed to the teachers.

The class is taken frequently to the autopsy room and points in medical anatomy are demonstrated, questions on this subject also being set throughout the session.

III. WORK IN DISPENSARY. After the completion of the third year the students have an opportunity to assist in the Dispensary. Dr. Frank Smith arranges the rotation of the groups and gives instruction in the method of taking histories and making examinations.

IV. CLINICAL LABORATORY. (a) Dr. Fitcher with Drs. Lazear and Gwyn conducts throughout the session, during two afternoons of the week, a class in Microscopical and Chemical Diagnosis. The course is a systematic one in which the students are trained in the methods of examining blood, sputum, gastric contents, urine, fæces, etc. The work is made as thoroughly practical as possible, the students being required to apply the methods and technique taught in the laboratory in the study of special cases assigned to them in the Hospital wards.

(b) One of the large rooms of the Clinical Laboratory is devoted exclusively to the third year students. Each student has his own place in the laboratory with locker, microscope, reagents, etc., and, the laboratory being open all day, he is encouraged to work independently during any spare time he may have.

V. CLINICS. On Wednesday at 12 Dr. Osler meets the third and fourth year students in the clinical amphitheatre of the Hospital. Chiefly acute diseases are shown and discussed. Week by week, throughout the session, the progress of the cases shown is reported, and in the more important affections, as typhoid fever and pneumonia, an

attempt is made to present in orderly sequence the entire experience of the session.

VI. RECITATIONS. These as already mentioned are held in connection with preceding courses.

The work of the Fourth Year is as follows:

The students are divided into four equal groups, each group serving for two months successively in the medical, surgical, obstetrical, and gynecological divisions of the Hospital and in attendance upon the special departments of the Dispensary.

I. WARD WORK. Of the four groups into which the class is divided the members of each serve for two months as clinical clerks in the medical wards of the Hospital. A certain number of beds is assigned to each student. He takes the history of new cases, keeps the notes, and, under the guidance and direction of the house-physician, makes the necessary examinations. The clinical clerks have access to the wards from 8 a. m. to 6 p. m. They accompany Dr. Osler in the ward visits, read the histories of the new cases, are questioned as to the results of their examinations, and receive special instruction. In this personal contact of student with patient, clinical instruction finds its rational development.

II. WARD CLASSES. At 9 a. m. the ward visit is made on Tuesdays, Thursdays and Saturdays by Dr. Osler, and at the same hour on Mondays, Wednesdays and Fridays by Dr. Fitcher. The members of the class are taught the methods of examination, the progress of the cases is followed, and instruction is given in the methods of treatment.

III. CLINICS. At 12 o'clock on Wednesdays the fourth year students attend the general medical clinic in the amphitheatre. Special cases are considered, particularly of the acute diseases as already mentioned. The clinical clerks read the histories of the new cases brought before the class and report on the progress of cases previously shown. The deaths of the week are discussed, the autopsy report read,

and the specimens shown. The more important acute diseases are dealt with systematically.

IV. RECITATIONS. At 11 a. m. on Thursdays a recitation on an assigned subject is held.

V. CLINICAL LABORATORY. A large room of the Clinical Laboratory is devoted exclusively to the fourth year class. Here each student has a place with microscope, reagents, etc., throughout the session, and can engage in any special work.

SURGERY

WILLIAM S. HALSTED, M.D., Professor of Surgery

JOHN M. T. FINNEY, M.D., Associate Professor of Surgery

JOSEPH C. BLOODGOOD, M.D., Associate in Surgery and Assistant in Surgical Pathology

HARVEY W. CUSHING, M.D., Associate in Surgery

HUGH H. YOUNG, M.D., Instructor in Genito-Urinary Diseases

The teaching is in the Dispensary, in the Wards and Operating Rooms of the Hospital, and in the Clinical Laboratory.

The principal work of the Third Year is in surgical pathology, surgical diagnosis, and the general principles of surgery. It includes:

I. SURGICAL PATHOLOGY. Dr. Bloodgood conducts a course in Surgical Pathology in the class room of the Clinical Laboratory assigned to the third year students. The gross and microscopical appearances of the different stages of repair of wounds under various conditions are studied. Pathological material from the operating rooms is regularly assigned to students for examination. Practice is afforded in the macroscopical and microscopical diagnosis of tumors and in surgical bacteriology.

II. MINOR SURGERY. This is taught by Dr. Finney in the Dispensary, where the student gains practical experience in diagnosis, in the application of surgical dressings and apparatus and, in general, in the treatment of surgical cases.

III. OPERATIVE SURGERY. This is taught by Dr. Halsted and the Associates by means of practical exercises.

IV. CLINICS. The students attend clinics conducted by Dr. Halsted and Dr. Finney.

V. RECITATIONS. Weekly recitations upon assigned subjects are held by Dr. Halsted.

The work of the Fourth Year consists of:

I. WARD WORK. The members of each of the four groups, into which the students of the fourth year are divided, serve for two months in the surgical wards of the Hospital. During this service they take the histories of cases and act as surgical dressers. They witness and assist at operations and have practice in operative surgery.

II. WARD CLASSES. The students make the morning visits to the wards with Dr. Halsted or Dr. Cushing, where they receive bedside instruction. They thus have daily opportunities to become familiar with the diagnosis, management and progress of surgical cases.

III. CLINICS. A weekly clinic, occupying three hours, is held by Drs. Halsted and Finney. Dr. Halsted occupies the first hour in the presentation of cases, which the students are permitted to examine and, in many instances, are expected to report upon. This exercise is directly followed by operations by Dr. Finney.

IV. PRIVATE OPERATING ROOM. To each group of fourth year students the privileges of the private operating room are extended for two months. Operations take place, as a rule, five days a week in this room.

V. SURGICAL ANATOMY AND OPERATIONS ON THE CADAVER. A course in anatomy as applied to surgery, and in operative surgery on the cadaver is given by Dr. Finney (see page 54).

VI. SURGICAL PATHOLOGY. The study of this subject with opportunities for the microscopical and bacteriological examination of surgical material is continued in the fourth year.

VII. RECITATIONS. A weekly recitation is held by Dr. Bloodgood.

OBSTETRICS

J. WHITRIDGE WILLIAMS, M.D., Professor of Obstetrics

GEORGE W. DOBBIN, M.D., Associate in Obstetrics

The instruction in Obstetrics is given in the third and fourth years as follows:

In the Third Year six hours a week are devoted to the teaching of Obstetrics. The time is divided between:

I. DIDACTIC LECTURES AND DEMONSTRATIONS.

II. LABORATORY WORK. Laboratory instruction is given in the anatomy, histology, and pathology of the female generative organs, from an obstetrical point of view, and in the pathology of the various diseases of pregnancy, labor, and the puerperal state, as well as the various diseases of bone, which play so important a part in the production of deformed pelves.

III. EXERCISE WITH THE MANIKIN. Demonstrations of the various operative procedures upon the manikin, with practical exercises by the students.

IV. RECITATIONS

In the Fourth Year, the greater part of the work is practical.

I. WARD WORK AND WARD CLASSES. Each of the four groups of students, into which the fourth year class is divided, serves for two months in the lying-in wards of the Hospital. Here they meet twice a week for instruction in the examination of pregnant women, especial attention being given to obstetrical palpation and pelvimetry. Two students are called to each case of ordinary labor, and the entire section to unusual and operative cases.

II. OUT-PATIENT OBSTETRICAL SERVICE. The students are also required to attend, under proper supervision, a definite number of poor women at their own homes, and during this period are expected to occupy at night rooms provided for the purpose which are connected with the Hospital by telephone.

III. CONFERENCES AND RECITATIONS. There are weekly

meetings of the class for clinical conference, in which cases that have been observed by the students are discussed and criticised and practical lessons drawn from them. At the same time recitations are held, which are accompanied by illustrative demonstrations by the students upon the manikin and with the microscope.

IV. TERATOLOGY. In the early part of the year, there is a short course of lectures upon Teratology.

GYNECOLOGY

HOWARD A. KELLY, M.D., Professor of Gynecology
WILLIAM W. RUSSELL, M.D., Associate in Gynecology
THOMAS S. CULLEN, M.B., Associate in Gynecology
OTTO G. RAMSAY, M.D., Instructor in Gynecology
ELIZABETH HURDON, M.D., Assistant in Gynecology

The instruction is given in the fourth year of the course. The members of each of the four groups into which the class is divided visit the gynecological wards of the Hospital for two months, where they are brought into direct contact with patients, and have opportunity to acquire experience in the examination and management of gynecological cases. The main features of the instruction consist in:

I. GYNECOLOGICAL DIAGNOSIS. Dr. Russell conducts a touch course once a week, the examinations being made under ether. The students by practical experience become familiar with the examination of normal and diseased pelvic organs.

II. WARD WORK AND WARD CLASSES. The students accompany the resident gynecologist upon his rounds through the wards, and receive bedside instruction. They take the histories of patients, follow the cases under the direction of the resident gynecologist, are present at the operations, and watch the after-care.

III. GYNECOLOGICAL OPERATIONS. Operations are performed four days every week by Dr. Kelly and Dr. Russell, demonstrating all the important gynecological conditions both major and minor. The field is peculiarly rich in ab-

dominal surgery; particular attention is paid to plastic surgery and to urinary affections, vesical, ureteral and renal. The methods of catheterization of the ureters and cystoscopy are taught.

IV. GYNECOLOGICAL PATHOLOGY. This is taught in a course of practical laboratory work and demonstrations conducted on one afternoon of the week by Dr. Cullen. Abundant fresh material is afforded by the operating room, and use is made of the large collection of preserved morbid specimens. Special attention is given to diagnosis from uterine scrapings and small portions of excised tissue. Dr. Hurdon gives demonstrations in the operating room after operations.

V. LECTURES. Dr. Kelly, Dr. Russell, and the Associates give weekly lectures upon the Principles of Gynecology, and upon selected topics.

VI. RECITATIONS. Recitations are held at stated intervals upon an assigned subject. These afford opportunity to test the advancement of the student, and for informal conferences.

The recitations, lectures, and laboratory course in Gynecological Pathology are attended by the entire class; the other courses for two months by each of the sections.

SPECIAL DEPARTMENTS OF PRACTICAL MEDICINE AND SURGERY

Instruction in these various special departments is given partly in the third, but mainly in the fourth year. For the Ward and Dispensary work the fourth year class, as already stated, is divided into four sections so arranged that each section in the course of the academic year has in rotation two months of daily service in the wards of each of the four main divisions, Medical, Surgical, Obstetrical, and Gynecological, of the Hospital, and in addition two months of daily dispensary work in each of the special departments viz.: Dermatology, Diseases of Children, Genito-Urinary

Diseases, Gynecology, Laryngology and Rhinology, and Ophthalmology and Otology. The course in Diseases of the Nervous System and a course of practical training in the use of the Ophthalmoscope fall in the third year.

The students perform their work in the Hospital wards in the morning, in General Medicine and Obstetrics from 8.30 to 10.30, and in General Surgery and Gynecology from 9 to 12. The Dispensary classes are in the morning from 10.30 to 12 and in the afternoons from 2 to 3.30.

At 12 and at 3.30 the entire class attends a daily clinic, lecture or recitation in Medicine, Surgery, Obstetrics, or one of the Special Branches.

DERMATOLOGY

T. CASPAR GILCHRIST, M.R.C.S.(Eng.), Clinical Professor of Dermatology

J. WILLIAMS LORD, M.D., Clinical Professor of Dermatology

The instruction in this department consists in:

I. Weekly systematic Lectures and Demonstrations of Cases, combined with Recitations, for the whole class throughout the fourth year. Cutaneous histology, pathology, and bacteriology, based upon the description and study of microscopical specimens, are important features of the course.

II. Daily Work in the Dispensary for two months for each section of students in the fourth year. Here the students, under proper supervision, gain practical experience in the personal examination, diagnosis, and treatment of cutaneous diseases.

In this, as in other departments, opportunities are afforded to those who have the time and requisite training for more extended scientific and practical study.

DISEASES OF CHILDREN

WILLIAM D. BOOKER, M.D., Clinical Professor of Pediatrics

The instruction consists in:

I. A weekly Clinic, Lecture or Recitation for the entire fourth year class. Special attention is given to nursery

hygiene; infant feeding; digestive disorders of infants; growth and development, and physiological and anatomical peculiarities of infancy and childhood; manifestations of diseases as peculiar to children.

II. Daily Work in the Dispensary for two months for each section. Students are required to act as clinical clerks, and to discuss the diagnosis and treatment of patients assigned to them. Cases of special interest are presented to all the students of the section for examination.

III. Work in the Clinical Laboratory for Diseases of Children, such as: microscopical examination of the fæces of infants, of ulcerations and patches in the mouth of children, and of sections of anatomical lesions in some of the more important diseases of childhood.

DISEASES OF THE NERVOUS SYSTEM

HENRY M. THOMAS, M.D., Clinical Professor of Neurology
STEWART PATON, M.D., Assistant in Clinical Neurology

The instruction is designed to be as practical as possible. It is given during the third year, the class for the dispensary work being divided into four sections. The students, having already had in previous years thorough courses in the anatomy, physiology, and pathology of the nervous system, are now taught the application of these subjects to the diagnosis and treatment of disease.

The work consists of:

I. Practical Work in the Dispensary. Each section works in the neurological dispensary one day in each week throughout the year. Here the students are taught to take careful histories of the patients, and to make thorough and systematic examinations into the condition of the nervous system. They are encouraged to work as independently as possible, and are expected themselves to make the practical application of the methods which they have been taught. The treatment of each patient is discussed with the instructor, and each student is given opportunity to learn the meth-

ods of applying electricity in the diagnosis and treatment of the different forms of nervous disease.

II. Weekly Recitation. On one day in each week the class is brought together for an hour, during which recitations are held, and informal talks are given. The students are referred to standard text-books and other literature, and are questioned on subjects given.

III. Weekly Clinic. A clinic is held once a week, at which time the students in turn examine cases before the class and are questioned about them. As far as possible the cases are selected to illustrate the subjects which are under consideration at the weekly recitations.

GENITO-URINARY DISEASES

WILLIAM S. HALSTED, M.D., Professor of Surgery

HUGH H. YOUNG, M.D., Instructor in Genito-Urinary Diseases

During the fourth year Dr. Young conducts the following special courses:

I. Weekly Lectures, Clinics, Demonstrations, or Recitations attended by the entire fourth year class. Practical use is made of an abundant clinical material and the various pathological conditions of the genito-urinary tract are illustrated by specimens from the large collection of the Pathological Laboratory.

II. Practical Work in the Dispensary. During two months members from each section of the fourth year class work as clinical assistants in the Genito-Urinary Department of the Dispensary. The student is taught the pathology, diagnosis and treatment of venereal and other genito-urinary diseases. Practical instruction is given in examinations of the urethra, prostate and bladder and in urethroscopic and cystoscopic examinations. The bacterial infections of the urethra and bladder, as exemplified in the dispensary cases, are closely followed by the student in the laboratory of the department.

LARYNGOLOGY AND RHINOLOGY

JOHN N. MACKENZIE, M.D., Clinical Professor of Laryngology and Rhinology

I. Weekly Lectures, Clinics, and Recitations. Throughout the fourth year there is a systematic course of weekly lectures, supplemented by pathological and clinical demonstrations, on the anatomy, the physiology and the common diseases of the upper air tract (nasal and accessory cavities, pharynx, larynx and trachea) and their relations to morbid processes in neighboring and remote parts of the body. In this course special attention is paid to those affections of the air passages which are of most importance to the general practitioner. In connection with these lectures, recitations are held. This course is attended by the entire fourth year class.

II. Daily Work in the Dispensary. Each section of the fourth year class attends for one hour and a half daily during two months the Laryngological and Rhinological Department of the Dispensary where practical instruction is given by Dr. Mackenzie and his assistants. After preliminary drilling in the use of the laryngoscope and other technical procedures and in diagnosis, the student assumes the work of clinical assistant. Pathological material is furnished for microscopic examination and diagnosis.

OPHTHALMOLOGY AND OTOTOLOGY

SAMUEL THEOBALD, M.D., Clinical Professor of Ophthalmology and Otology

ROBERT L. RANDOLPH, M.D., Associate in Ophthalmology and Otology

HENRY O. REIK, M.D., Assistant in Ophthalmology and Otology

I. Weekly Lectures or Recitations are given by Dr. Theobald throughout the academic year. These lectures are of a practical character and include a consideration of the surgical anatomy of the eye and ear, the physiology of vision and of hearing, the various methods of examining

the eye and the ear, and the more important diseases of these organs.

II. Daily Clinics are given in the Dispensary by Dr. Theobald, Dr. Randolph or Dr. Reik. Each group of students attends the Ophthalmological and Otological Department of the Dispensary daily for two months. The students are permitted to assist in operations, to examine cases for diagnosis, and to familiarize themselves with the use of the ophthalmoscope, the methods of testing errors of refraction, defects of hearing, etc. The small number of students comprising the separate groups make especially valuable the opportunities thus afforded of acquiring a practical knowledge of the diseases of the eye and ear.

PSYCHIATRY

HENRY M. HURD, M.D., Professor of Psychiatry

HENRY J. BERKLEY, M.D., Clinical Professor of Psychiatry

The instruction in the Diseases of the Mind comprises:

I. Weekly Lectures, Recitations, or Pathological Demonstrations by Dr. Hurd or Dr. Berkley, from October until the first of May.

II. Visits to the wards of the large City Asylum at Bay View to study the various forms of mental disease, and to attend clinical lectures and demonstrations by Dr. Berkley.

HYGIENE

Instruction in Hygiene is included in the courses in Pathology and Bacteriology and in Physiological Chemistry. The subject of Diet in Health and Disease is considered by Dr. Jacobs.

In addition, a course of lectures on special topics in Hygiene is given in the third year by the Lecturer on Hygiene, Dr. Alexander C. Abbott, Professor of Hygiene in the University of Pennsylvania. In this course are considered among other subjects, the predisposing factors of disease, as regards both the individual and the community, includ-

ing the influence of age, sex, race, occupation, social occupation, etc.; the relation between public health and the character of the water supply and the mode of disposal of waste; ventilation, especially in relation to the health and comfort of inmates of hospitals, public institutions, barracks, etc., together with the modern views concerning respiratory products.

FORENSIC MEDICINE

ROBERT FLETCHER, M.R.C.S. (Eng.), M.D., Lecturer on Forensic Medicine

The instruction in this department is given, in the fourth year, by Dr. Fletcher.

The course comprises: The history of forensic medicine. The death-bed and dying declarations. The duties and rights of the medical witness. The dead body and its examination. Personal identification, including the living person, the dead body, mutilated remains, the skeleton and detached bones; also the examination of stains of blood, semen, etc. The presumption of death and of survivorship. Life insurance. Malpractice. Railway injuries. Sex, including everything in which the female sex may be concerned in matters of jurisprudence. Asphyxia, including hanging, drowning, suffocation, and strangulation. Effects of cold and heat upon the body. Wounds and injuries.

Instruction in toxicology is provided for in a separate course (p. 58), and the jurisprudence of insanity is considered in connection with psychiatry.

MEDICAL ZOOLOGY

CHARLES W. STILES, Ph.D., Lecturer on Medical Zoology and Zoologist to the U. S. Bureau of Animal Industry

Instruction in Medical Zoology is given to students of the third and fourth years by Dr. Stiles. It consists of a course of ten lectures on the animal parasites of man, illustrated with numerous charts and specimens, and supple-

mented by practical laboratory exercises in examining meat for trichinosis and in the diagnosis of other zooparasitic diseases by microscopic examination of fæces. The parasites are studied from the standpoints of zoology, practical medicine, and public hygiene.

HISTORY AND LITERATURE OF MEDICINE

JOHN S. BILLINGS, M.D., Lecturer on the History and Literature of Medicine

The Historical Club meets once a month throughout the academic year in the Assembly Room of the Hospital. Old and rare or otherwise historically interesting books are exhibited and the history of medical doctrines, of epochs in medicine and of the lives and contributions to knowledge of eminent medical men, and other themes pertaining to the history of medicine are considered. Many students avail themselves of the stimulating and educational advantages afforded by the meetings of this Club.

SPECIAL LECTURES

From time to time, as opportunity offers, short courses of special lectures or demonstrations upon selected topics are given either by specially appointed lecturers or by members of the teaching staff.

PROGRAMME OF COURSES

For convenience of reference the arrangement of studies in each of the four years is here given. The general character and the details of these courses of instruction have been described in the foregoing pages. Schedules of the hours and other details of the exercises are furnished to the students at the beginning of each session. The right to change or amend the courses of study, if deemed desirable, is reserved.

FIRST YEAR

Anatomy.

Osteology. Lectures and Laboratory, October 1 to November 15, afternoons.

Histology and Histogenesis. October 1 to November 15, forenoons.

Systematic Human Anatomy. November 15 to March 15, afternoons.

Conferences in Anatomy. November 15 to March 15, three times a week.

Macroscopic Organology. November 15 to February 1, Monday mornings.

Microscopic Organology. November 15 to February 1, Monday, Wednesday and Friday mornings.

Neurology. February 1 to March 15, Monday, Wednesday and Friday mornings.

Advanced Work. March 15 to June 1, daily (limited number of students).

Physiology. January 1 to June 1.

Lectures, Demonstrations and Recitations, 11.30 a. m. to 1 p. m., twice weekly until March 15; five times a week after March 15.

Physiological Chemistry.

Laboratory Work. March 1 to June 1, afternoons; five days a week.

Lectures, two or three a week after March 1.

Recitations, once a week after March 1.

Examinations in Histology, Organology, and Physiological Chemistry are held at the end of the first year.

SECOND YEAR

Anatomy.

Systematic Human Anatomy. November 15 to March 15, forenoons.

Regional Anatomy. January 1 to March 15, forenoons.

Conferences in Anatomy. November 15 to March 15, three times a week.

Neurology (lectures). February 1 to March 15, Monday, Tuesday and Wednesday, 9 o'clock.

Advanced Work and Original Investigation. October 1 to June 1, daily (limited number of students).

Physiology. October 1 to Christmas.

Laboratory Work in sections, twice a week, 10 to 1.

Lectures and Recitations, 9 to 10, five a week.

Bacteriology. October 1 to Christmas.

Laboratory Work, 2 to 5, three days a week.

Recitations, once a week.

Lectures on Infection and Immunity, once or twice a week.

Pathology (including Post-Mortem Examinations, General Pathology, Pathological Anatomy and Histology, and Pathological Demonstrations). January 1 to June 1.

Laboratory Work, 2 to 5, three days a week.

Recitations, once a week.

Lectures, once or twice a week.

Post-Mortem Examinations.

Demonstrations of Gross Morbid Specimens, once a week.

Pharmacology and Toxicology. January 1 to June 1.

Laboratory Work, Lectures and Demonstrations, afternoons, two days a week.

Recitations, once a week.

Auscultation and Percussion.

Preliminary Course. April 15 to June 1, 10 to 12, twice a week.

Examinations in Anatomy, Physiology, Bacteriology, Pathology, Pharmacology, and Toxicology are held at the end of the second year. A practical examination in Bacteriology is held in December at the end of the course.

THIRD YEAR

Medicine.

Physical Diagnosis, twice a week for each section.

General Symptomatology of Disease. Dispensary Work with Clinical Instruction, three days a week.

Clinics in the Hospital Amphitheatre, once a week.

Recitations, once a week.

Clinical Microscopy.

Laboratory Work, 2.30 to 4.30, two days a week.

Surgery.

Dispensary Work with Clinical Instruction, mornings, three days a week.

Clinics in the Hospital Amphitheatre, 10 to 1, once a week.

Recitations, once a week.

Laboratory Work in Surgical Pathology, 3 to 5, twice a week.

Practical Course in Operative Surgery.

Surgical Anatomy and Operations on the Cadaver, January 1 to March 15, twice a week.

Obstetrics.

Recitations, Lectures, or Demonstrations, three times a week.

Laboratory and Manikin Exercises, three hours a week.

Diseases of the Nervous System.

Dispensary, 10.30 to 12, daily. Once a week for each section.

Clinic, once a week.

Recitations, once a week.

Pharmacy.

Demonstrations and Lectures, twice a week, for three months.

Practical Therapeutics, including Dietetics.

Lectures, Demonstrations and Conferences, twice a week.

Hygiene.

Lectures and Demonstrations on Special Topics, once a week for two months.

History of Medicine.

Lectures (attended by all students).

Examinations upon the work of the year are held at the end of the year.

FOURTH YEAR

For the work in the Hospital Wards and the Dispensary the fourth year class is divided into four sections, each section serving two months as Clinical Clerks or Surgical Dressers in the Medical, Surgical, Gynecological, and Obstetrical Wards of the Hospital, and also two months in the special departments of the Dispensary, viz.: the Dermatological, Genito-Urinary, Laryngological and Rhinological, Ophthalmological and Otological, and Pediatric.

Medicine.

Hospital Wards (Ward Work and Ward Classes), 8.30 to 10.30 a. m., daily. Two months' service for each section.

Clinics, once a week.

Recitations, once a week.

Surgery.

Hospital Wards and Operating Room, 9 to 12, daily. Two months' service for each section.

Clinics, 10 to 1, once a week.

Recitations, once a week.

Operative Surgery.

Obstetrics.

Hospital Wards, 8.30 to 10.30 a. m., daily. Two months' service for each section.

Out-Patient Obstetrical Service. Two months for each section.

Clinical Conferences, once a week.

Gynecology.

Hospital Wards and Operating Room, 9 to 12, daily.

Two months' service for each section.

Ward Classes, twice a week.

Touch Course, once a week.

Lectures, twice a week.

Recitations, once a week.

Laboratory Work and Demonstrations in Gynecological Pathology, once a week.

Dermatology.

Dispensary, 2 to 3.30 daily. Two months for each section.

Lectures, Clinics or Recitations, once a week.

Diseases of Children.

Dispensary, 10.30 to 12, daily. Two months for each section.

Lectures, Clinics or Recitations, once a week.

Genito-Urinary Diseases.

Dispensary 10 to 12, daily. Two months for each section.

Lectures, Clinics or Recitations, once a week.

Laryngology and Rhinology.

Dispensary, 2 to 3.30, daily. Two months for each section.

Lectures, Clinics or Recitations, once a week.

Ophthalmology and Otology.

Dispensary, 2 to 3.30, daily. Two months for each section.

Lectures, Clinics or Recitations, once a week.

Psychiatry.

Lectures, once a week.

Clinics at Bay View, once a week.

Forensic Medicine.

Lectures, once a week, for three months.

Medical Zoology.

Ten Lectures with Demonstrations and Laboratory Work on Animal Parasites.

Examinations in Medicine, Surgery, Obstetrics, Gynecology and the various Special Departments above enumerated are held at the end of the fourth year.

ANNUAL EXAMINATIONS

At the end of the first year examinations in physiological chemistry, histology, and microscopic anatomy are held.

At the end of the second year examinations in anatomy, physiology, pathology, bacteriology, pharmacology and toxicology are held.

At the end of the third year examinations in medicine, surgery, and obstetrics, so far as these subjects have been pursued, are held.

At the end of the fourth year are the final examinations in medicine, surgery, obstetrics, gynecology, and the special branches in which instruction has been provided during this year.

The examinations are partly written and partly oral, and include practical tests of laboratory and clinical work.

Each student must have done satisfactory work in all the subjects and must pass the examinations at the end of each year, before he can be admitted to the courses of the succeeding year.

Conditions must be absolved at the beginning of the session in October. No student who has any condition unsatisfied at the close of the first condition examination of the academic year shall be permitted to continue with his class without the express authorization of the Faculty.

The estimation of the standing of each student is based both upon the general character of his work and upon the results of examinations.

HOSPITAL APPOINTMENTS

At the close of the academic year in June twelve members of the graduating class are selected for appointment as

House Officers in the Johns Hopkins Hospital to serve for one year from September first. The appointments are made upon the basis of the general standing of the students in all the subjects of study during the entire four years' course, combined with consideration of personal fitness. These appointees reside in the Hospital and become officers upon the house-staff.

A certain number of externe appointments are offered to students from the graduating class in June. These appointees will have the privilege of working in the Dispensary. They may assist in the teaching, and may pursue advanced work and original research in the various laboratories without charge.

In addition the Faculty is entitled to nominate annually two physicians as assistants upon the house-staff of the City Asylum at Bay View.

The appointments of the resident physician, surgeon, gynecologist and obstetrician of the Johns Hopkins Hospital are permanent ones. The first and second resident assistantships under these are annual appointments, subject to renewal.

REQUIREMENTS FOR GRADUATION

The degree of Doctor of Medicine is conferred upon those who, after fulfilling all the requirements for admission, have completed satisfactorily the four years' course of study in this Medical School.

In every instance the candidate must have fulfilled all of the requirements for admission to this Medical School and must have completed, as a regularly matriculated or registered medical student, a four years' course of medical study, equivalent in its standards to that given here, of which the final year must be spent in this Medical School.

The degrees are publicly conferred by the Johns Hopkins University at the Commencement on the second Tuesday of June.

CHARGES FOR TUITION

The charge for tuition is two hundred dollars per annum, payable at the Treasurer's Office or at the office of the Dean of the Medical School, in semi-annual instalments, October 1 and February 1. There are no extra charges for matriculation, for graduation, for instruction in any department, or for laboratory courses, except in special cases for materials consumed. To a student who does not possess a microscope, there is an annual charge of five dollars for the use of one, with an additional charge of two dollars for the use of an oil-immersion lens. One dollar is charged for the rental of a dissecting microscope for one year. The student is responsible for damage to the microscope thus rented. A deposit of ten dollars as caution money is required from each student at the time of his enrollment. The caution money is repaid to the student when he leaves, if there are no charges against him. Special charges are made for breakage and for damage to apparatus.

The Treasurer's Office is at the University on North Howard Street. It is open daily from 9 a. m. to 4.15 p. m.

APPENDIX

I

ENDOWMENT

The founder of the Johns Hopkins University, in devoting his large fortune to the establishment of the University and the Hospital, had in view the organization of a school of medicine. In his letter addressed to the Trustees of the Hospital, dated March 10, 1873, these significant words occur:

"It will be your especial duty to secure, for the service of the Hospital, surgeons and physicians of the highest character and greatest skill. . . . In all your arrangements in relation to this Hospital, you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the Medical School of the University for which I have made ample provision in my will."

When the University was opened in 1876, arrangements were made for instruction in those sciences, such as physics, chemistry, and biology, which lead up naturally to the professional study of medicine. In 1884 the professorship of pathology was filled and the pathological laboratory was opened. In 1889 the Johns Hopkins Hospital was opened, and the physician, surgeon, and gynecologist in chief to the Hospital were appointed to the professorships, respectively, of medicine, surgery, and gynecology and obstetrics. At the same time the professor of psychiatry was appointed. Opportunities for instruction were afforded to graduates in medicine. Ampler endowment, however, was needed to complete the organization of a medical department.

Gifts amounting to \$111,731.68, most of which were offered to this University in October, 1890, by a committee of women, and an additional gift of \$306,977, offered to the University in December, 1892, in addition to her previous subscriptions, by Miss Mary Elizabeth Garrett, made up, with other available resources, the amount of \$500,000, which had been agreed upon by the Trustees as the minimum sum to be secured for the opening of the Medical Department. These generous contributions were made upon condition that women be received upon the same terms as men.

This endowment, added to the available resources of the Johns Hopkins University and the Johns Hopkins Hospital, enabled the Trustees to complete the organization of the Medical Department and to open it for instruction in 1893.

II

THE WOMEN'S MEDICAL SCHOOL FUND

At a meeting of the Board of Trustees of the University, October 28, 1890, the following letter was presented:

"The committees formed for the purpose of raising a fund to procure the most advanced medical education for women, can now place at your disposal the sum of one hundred thousand dollars for the use of your Medical School, if you will, by resolution, agree that women whose previous training has been equivalent to your preliminary medical course, shall be admitted to the school, when it shall open, upon the same terms which may be prescribed for men. There can be no doubt that women ought to be trained to act as nurses for sick women. There is as little doubt that a sufficient number of women ought to be educated and trained in such manner as to be fully able to care for sick women who may wish or ought to be treated by women. We have devoted ourselves to the furtherance of this object. We have reason to hope that a university which proposes to found a medical school intended to teach advanced methods in the treatment of those diseases which afflict mankind, will not refuse to women the opportunity of learning such methods. There is now a general interest in our movement. In order that this interest may be sustained, we ask you to consider our offer at the earliest possible period.

NANCY MORRIS DAVIS,

Chairman of the Baltimore Committee."

The following minute was adopted by the Trustees:

The President and Board of Trustees of the Johns Hopkins University have received from Mrs. Nancy Morris Davis, chairman of one of the committees formed for the purpose of raising a fund to procure the most advanced medical education for women, the gratifying intelligence that \$100,000 has been raised for the use of their intended Medical School, and is at their disposal, if they will, by resolution, agree to the terms upon which the money was contributed by its donors.

These terms are that this Board, if it accepts the funds thus raised, shall agree, by resolution, that, when its Medical School shall be

opened, women whose training has been equivalent to the preliminary medical course prescribed for men, shall be admitted to such school upon the same terms as may be prescribed for men.

The offer to this University of the particular fund is the free voluntary act of women residing in this State and in other States, made without the suggestion or solicitation of this Board, and we accept it under and subject to the terms which are made a part of the gift, with the understanding and declaration, however, that such preliminary training in all its parts shall be obtained in some other institution of learning devoted, in whole or in part, to the education of women, or by private tuition.

The fund so contributed shall be invested and known as "The Women's Medical School Fund," and that fund, and all interest to accrue thereon, and all additions made thereto for the same purpose, shall remain invested for the purpose of increase only until, with its aid as a foundation, a general fund has been accumulated amounting to not less than \$500,000, and sufficient for the establishment and maintenance of a Medical School worthy of the reputation of this University, and fully sufficient as a means of complete medical instruction. Then, and not until then, will a Medical School be opened by this University; and then, and not until then, will the gift now offered be used by this University; and then, and not until then, will the terms attached thereto be operative.

The utility of a training school for women nurses has been demonstrated by the experience and practice of the Johns Hopkins Hospital, and by the necessities of home life among our people.

This Board is satisfied that in hospital practice among women, in penal institutions in which women are prisoners, in charitable institutions in which women are cared for, and in private life, when women are to be attended, there are a need and place for learned and capable women physicians; and that it is the business and duty of this Board, when it is supplied with the necessary means for opening its proposed Medical School, to make provision for the training and full qualification of such women for the abundant work which awaits them in these wide fields of usefulness.

Nothing contained in this minute shall be construed as abridging, in any manner, the right of the Board of Trustees of the Johns Hopkins University to make such rules and regulations as they may deem necessary for the government of its School of Medicine, when it is organized; and in making such rules and regulations, the terms of this minute shall always be respected and observed.

III

THE MARY ELIZABETH GARRETT FUND*

TERMS OF THE GIFT, AS ACCEPTED BY THE TRUSTEES,
FEBRUARY, 21, 1893.

Miss Mary Elizabeth Garrett, in order to make up the sum of \$500,000, which the Board of Trustees required should be secured as an endowment before the Medical School of the University was opened, has contributed to that fund the sum of \$306,977 upon the following terms, which have been agreed to by the University:

1. That women shall enjoy all the advantages of the Medical School of the Johns Hopkins University on the same terms as men, and shall be admitted on the same terms as men to all prizes, dignities or honors that are awarded by competition, examination, or regarded as rewards of merit.

2. That not more than \$50,000 of the original endowment of \$500,000 shall be expended on a building or buildings; and that in memory of the contributions of the Committees of the Women's Medical School Fund, this building, if there be but one, or the chief building, if there be more than one, shall be known as the Women's Fund Memorial Building.

3. That the Medical School of the University shall be exclusively a graduate school as hereinafter explained, that is to say: That the Medical School of the Johns Hopkins University shall form an integral part of the Johns Hopkins University, and, like other departments of the University, shall be under the management and control of the Trustees of the said University; that it shall provide a four years' course, leading to the degree of Doctor of Medicine; that there shall be admitted to the school those students only who, by examination or by other tests equally satisfactory to the Faculty of the Medical School (no distinction being made in these tests or examinations between men and women), have proved that they have completed the studies included in the Preliminary Medical Course (Group Three, Chemical-Biological Course) as laid down in the University Register (but this condition is not meant to restrict the Trustees from receiving as hearers, but not as candidates for the degree of Doctor of Medicine, those who have received the degree of Doctor of Medicine, or its equivalent, in some school of good repute); and that the degree of Doctor of Medicine of the Johns Hopkins University shall be given to no Doctors of Medicine who have not proved by examination or by other tests equally satisfactory to the Faculty of the Medical School that they

* So designated by the Trustees, December 24, 1892.

have completed the studies included in the Preliminary Course, besides completing the course of instruction of the Medical School of the Johns Hopkins University.

The foregoing provision shall not be construed as restricting the liberty of the University to make such changes in the requirements for the admission to the Medical School of the Johns Hopkins University or to accept such equivalents for the studies required for admission to this school as shall not lower the standard of admission specified in this clause: provided that the requirements in modern languages other than English shall not be diminished, and provided also that the requirements in non-medical scientific studies shall include at least as much knowledge of natural science as is imparted in the three minor courses in science now laid down in its university register, the subjects and arrangements of these scientific studies being subject to such modifications as may from time to time seem wise to its Board and to the Faculty of the Medical School, but being at all times the same for all candidates for admission. (For such requirements always see University Register.)

4. That the terms of this gift and the Resolutions of October 28th, 1890, by which the Trustees accepted the gift of the Women's Medical School Fund, shall be printed each year in whatever annual calendars may be issued announcing the courses of the Medical School.—See appended Resolutions.

5. That there shall be created a committee of six women to whom the women studying in the Medical School may apply for advice concerning lodging and other practical matters, and that all questions concerning the personal character of women applying for admission to the School, and all non-academic questions of discipline affecting the women studying in the Medical School shall be referred to this committee, and by them be in writing reported for action to the authorities of the University; that the members of this committee shall be members for life; that the committee, when once formed, shall be self-nominating, its nominations of new members to fill such vacancies as may occur being subject always to the approval of the Board of Trustees of the University.

6. That in the event of any violation of any or all of the aforesaid stipulations, the said sum of \$306,977 shall revert to her, or such person or persons, institution or institutions, as she by testament or otherwise may hereafter appoint.

It will be observed that by the tenor of the foregoing terms no university course will be in any way modified by any conditions attached to her gift. Those conditions relate exclusively to preparation for the Medical School, and have received, in the shape in which they are now presented, the unanimous approval of the Medical Faculty of the University.

The terms of admission to the Medical School of the University, as formulated and interpreted by the Medical Faculty of the University, February 4, 1893, and here subjoined, are therefore in entire accordance with the terms of her gift.

(Signed)

MARY E. GARRETT.

REQUIREMENTS FOR ADMISSION TO THE MEDICAL SCHOOL OF THE
JOHNS HOPKINS UNIVERSITY, UNANIMOUSLY APPROVED
BY THE MEDICAL FACULTY, FEBRUARY 4, 1893.

A course of four years' instruction will be provided leading to the degree of Doctor of Medicine.

To this course there will be admitted as candidates for the degree:

1. Those who have satisfactorily completed the Chemical-Biological Course which leads to the A.B. degree in this University.

2. Graduates of approved colleges or scientific schools who can furnish evidence: (a) That they have a good reading knowledge of French and German; (b) That they have such knowledge of physics, chemistry and biology as is imparted by the regular minor courses given in these subjects in this University.

3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved college or scientific school, and the knowledge of French, German, physics, chemistry and biology already indicated.

By approved colleges and scientific schools are meant those whose standard for graduation shall be considered by this University as essentially equivalent to its standard for graduation in the undergraduate department.

It is to be understood that at least one year's study in the Chemical and Biological Sciences in their immediate relations to medicine shall be required from students after their entrance to the Medical School.

WOMEN'S COMMITTEE OF THE MEDICAL SCHOOL.

MRS. HENRY M. HURD,

MRS. IRA REMSEN,

MRS. HOWARD A. KELLY,

MISS M. CAREY THOMAS,

MISS MARY M. GWINN,

MISS MARY E. GARRETT.

Their duties are stated in paragraph 5 of the letter printed above.

PART II

CATALOGUE AND ANNOUNCEMENT OF THE
SPECIAL COURSES OF INSTRUCTION
FOR GRADUATES IN
MEDICINE

PHYSICIANS ATTENDING SPECIAL COURSES

MAY-JUNE, 1899

- FRANK G. ATWOOD New Haven, Conn.....*Medicine*
M.B., University of Toronto, 1896.
- HARVEY G. BECK..... York, Pa*Medicine*
M.D., College of Physicians and Surgeons (Balt.), 1896.
- A. KERR BOND..... Baltimore *Clinical Microscopy*
A.B., Johns Hopkins University, 1880; M.D., University of Maryland, 1882.
- HOWARD S. CHRISTIAN..... Millville, Pa....*Medicine and Gynecology*
M.D., College of Physicians and Surgeons (Balt.), 1887.
- JAMES D. CURTIS..... St. Thomas, Ont....*Clinical Microscopy*
M.B., University of Toronto, 1894.
- ROZEL M. CURTISS..... Marengo, Ill*Medicine*
M.D., College of Physicians and Surgeons (Chicago), 1884.
- CHRISTIAN DEETJEN Baltimore*Medicine*
M.D., Julio Maximiliano College (Würzburg), 1890.
- WALTER B. EMERY Atlanta, Ga.....*Normal Histology,*
Clinical Microscopy and Medicine
M.D., Atlanta College of Physicians and Surgeons, 1899.
- HENRY J. EVANS..... Baltimore*Medicine*
M.D., Hahnemann Medical College (Phila.), 1881.
- EDGAR A. FISHER..... Worcester, Mass*Gynecology*
M.D., Boston University, 1887.
- THOMPSON D. GILBERT..... Washington, D. C.....*Bacteriology and*
Clinical Microscopy
M.D., University of Maryland, 1899.
- LE ROY K. HAGENOW..... South Manchester, Conn.....*Surgery*
M.D., Baltimore Medical College, 1898.
- HOWELL T. HEFLIN Bessemer, Ala....*Medicine and Surgery*
M.D., University of Maryland, 1893.
- WYATT HEFLIN Birmingham, Ala.....*Gynecology and*
Clinical Microscopy
M.D., Jefferson Medical College, 1884.
- GEORGE R. HOLTZAPPLE..... York, Pa.....*Medicine, Pathology,*
Bacteriology and Clinical Microscopy
M.D., Bellevue Hospital Medical College, 1884.
- HARVEY P. JACK..... Canisteo, N. Y.....*Gynecology*
M.D., College of Physicians and Surgeons (Balt.), 1891.

- SHEPPARD S. KELLAM..... Baltimore*Pathology and Bacteriology*
M.D., University of Virginia, 1898.
- HOWARD M. KEMP..... Bloomington*Normal Histology and*
M.D., University of Maryland, 1881. *Clinical Microscopy*
- GOLDSBY KING Selma, Ala.....*Medicine and Gynecology*
M.D., Medical College of South Carolina, 1880.
- THOMAS W. KOON..... Eglon, W. Va..*Med., Surg. and Gynecol.*
M.D., College of Physicians and Surgeons (Balt.), 1893.
- ALFRED H. LILLISTON..... Accomac, Va.....*Medicine, Surgery and*
M.D., University of Virginia, 1898. *Clinical Microscopy*
- EDWARD L. MARTINDALE..... Clinton, Iowa.....*Medicine*
M.D., University of Michigan, 1894.
- JAMES B. McELROY..... Stovall, Miss.....*Pathology, Bacteriology*
M.D., College of Physicians and Surgeons (Balt.), 1893. *and Clinical Microscopy*
- FRISBY T. MCKAIG..... Baltimore..*Normal Histology, Pathology,*
M.D., Alabama Medical College, 1890. *Bacteriology and Clinical Microscopy*
- ELIZABETH McLAUGHRY New Castle, Pa....*Medicine, Gynecology*
M.D., Woman's Medical College (Phila.), 1894. *and Clinical Microscopy*
- IRVING MILLER Baltimore *Gynecology*
M.D., University of Maryland, 1887.
- GEORGE W. MITCHELL..... Baltimore *Medicine*
M.D., University of Maryland, 1896.
- EUGENE E. MURPHY..... Augusta, Ga....*Medicine, Pathology and*
M.D., University of Georgia, 1898. *Clinical Microscopy*
- DAVID H. NUSBAUM Bloomington, Ill..... *Gynecology and*
M.D., Jefferson Medical College, 1888. *Clinical Microscopy*
- THEODORE E. OERTEL..... Augusta, Ga. *Bacteriology*
M.D., Columbian University, 1891.
- MARTHA E. OSMOND..... Langhorne, Pa..*Medicine and Pediatrics*
M.D., Woman's Medical College (Phila.), 1898.
- ROBERT S. PAGE..... Baltimore *Clinical Microscopy*
M.D., University of Maryland, 1898.
- THOMAS D. PARKE..... Birmingham, Ala...*Medicine, Pediatrics*
M.D., University of New York, 1879. *and Pathology*
- ELEANOR PARRY New York City...*Med. and Clin. Micro.*
M.D., Woman's Medical College of the New York Infirmary, 1894.
- HERBERT M. POMEROY Los Angeles, Cal..*Medicine, Gynecology,*
M.D., Cooper Medical College, 1892. *Pathology and Clinical Microscopy*
- JAMES E. SADLIER..... Poughkeepsie, N. Y..*Medicine, Surgery,*
M.D., Union University (Albany), 1887. *Gynecology and Special Departments*
- DAVID SHOEMAKER Truckee, Cal...*Medicine, Surgery, Gynecology and Clinical Microscopy*
M.D., Cooper Medical College, 1891.
- J. PHANDORA SIMPSON Christiansburg, Va.....*Medicine*
M.D., Woman's Medical College (Phila.), 1898.

- JOHN W. STAPLES..... Franklin, N. H....*Medicine, Gynecology
M.D., University of Vermont, 1888. and Clinical Microscopy*
- JOHN A. TOMPKINS, JR..... Baltimore....*Pathology and Bacteriology
M.D., University of Maryland, 1898.*
- BERTIS R. WAKEMAN..... Hornellsville, N. Y.....*Gynecology
M.D., Long Island Medical College, 1893.*
- JOHN C. WELCH Bellevue, Pa.....*Medicine and Pathology
M.D., Medico-Chirurgical College (Phila.), 1893.*
- HENRY M. WENNER Nanticoke, Pa.....*Pathology
M.D., University of Pennsylvania, 1891.*
- CUNNINGHAM WILSON Birmingham, Ala*Medicine
M.D., University of Pennsylvania, 1884.*
- JAMES J. WINGARD..... Lexington, S. C..*Med. and Clin. Micro.
M.D., University of Virginia, 1895.*
- JOHN ZAHORSKY St. Louis, Mo....*Med. and Clin. Micro.
M.D., Missouri Medical College, 1895.*

PHYSICIANS ATTENDING SPECIAL COURSES AT OTHER TIMES DURING 1899-1900

- JAMES J. CARROLL..... Baltimore*Special Research
M.D., University of Maryland, 1893.*
- ROZEL M. CURTISS..... Marengo, Ill..*Bacteriology, Pathology and
M.D., College Physicians and Surgeons (Chicago), 1884. Gynecology*
- THOMAS FEARN Baltimore*Special Research
M.D., University of Maryland, 1890.*
- MARGARET HAMILTON Ft. Wayne, Ind.....*Special Research
A.B., Bryn Mawr College, 1897. (Anatomy)*
- JAMES W. HARTIGAN Morgantown, W. Va.....*Surgery
M.D., Bellevue Hospital Medical College, 1886.*
- JAMES J. HARWARD..... Fulford, Md.....*Medicine and Surgery
M.D., University of Maryland, 1899.*
- ABRAM T. KERR..... Buffalo, N. Y.....*Anatomy
M.D., University of Buffalo, 1897.*
- MINORA E. KIBBE San Francisco, Cal....*Medicine, Clinical
M.D., Cooper Medical College, 1898. Microscopy and Gynecology*
- CAROLINE W. LATIMER Baltimore..*Special Research (Physiology)
M.D., Woman's Medical College (Balto.), 1890; A.B. and A.M., Bryn Mawr College,
1896.*

- GEORGE K. McDOWELL..... Staples, Minn.....*Medicine and Surgery*
M.D., C.M., Trinity College (Canada), 1892.
- ALEXIUS MCGLANNAN..... Baltimore*Physiological Chemistry*
M.D., College of Physicians and Surgeons (Balt.), 1895.
- THOMAS D. MEIKLE..... Mt. Forest, Ont.....*Gynecology*
M.D., C.M., Trinity College (Canada), 1883.
- JOHN J. MIDDLETON..... Baltimore *Bacteriology*
M.D., Columbia University (N. Y.), 1895.
- WALTER McN. MILLER..... Reno, Nevada.....*Medicine, Pathology*
M.D., Cooper Medical College, 1895. *and Bacteriology*
- DAVID H. NEWTON..... Detroit, Mich*Gynecology*
M.D., Detroit College of Medicine.
- FRANK J. OTIS..... Battle Creek, Mich.....*Bacteriology*
M.D., American Missionary College (Chicago), 1897.
- CHARLES H. POTTER..... Baltimore*Special Research*
M.D., Baltimore Medical College, 1897. *(Pathology)*
- GEORGE B. SOMERS..... San Francisco, Cal.....*Gynecology*
M.D., Cooper Medical College, 1888.
- WILLIAM L. THOMPSON..... Chicago, Ill.....*Tropical Diseases*
M.D., University of City of New York, 1889.
- GORDON WILSON..... Baltimore....*Bacteriology and Pathology*
M.D., University of Virginia, 1899.

SPECIAL COURSES FOR GRADUATES IN MEDICINE

GENERAL INFORMATION

Since the opening of the Johns Hopkins Hospital in 1889, courses of instruction have been offered to graduates in medicine. The attendance upon these courses indicates gratifying appreciation of the special advantages here afforded. These special courses of instruction for graduates in medicine are given annually during the months of May and June. During April a preliminary course in Normal Histology and Microscopic Anatomy is offered as a preparation for subsequent work in pathological histology. During October instruction in tropical diseases met with in this region is given to a limited number of physicians. (See page 110.)

The instruction is intended to meet the requirements of practitioners of medicine, and is almost wholly of a practical character. It includes laboratory courses, demonstrations, bedside teaching, and clinical instruction in the wards, dispensary, amphitheatre, and operating rooms of the Hospital. For the months of May and June definite schedules have been arranged for courses in General Medicine, Surgery, Gynecology, Pathology, Bacteriology and Clinical Microscopy. Some description of these courses is given in the following pages. In the various special branches of medicine practical courses will also be offered to a limited number of students.

These courses are open to those who have taken a medical degree and who give evidence satisfactory to the several instructors that they are prepared to profit by the opportunities here offered. The number of students who can be accommodated in some of the practical courses is necessarily limited. For these the places are assigned according to the date of application.

The clinical instruction is given in the wards of the Johns Hopkins Hospital, in the Dispensary, and in the Operating Rooms and Amphitheatre. These afford an abundance of clinical material.

The Pathological and the Clinical Laboratories are on the grounds of the Hospital, and are well arranged and equipped for their special purposes. The opportunities are thus convenient for combining clinical work with studies in the Pathological, Bacteriological, and Clinical Laboratories.

In the main building of the Hospital is a Medical Library with sets of medical periodicals. The various special laboratories possess also appropriate libraries. These, as well as the libraries of the Peabody Institute and of the Medical and Chirurgical Faculty, are available for the use of medical students. The proximity of Washington permits the ready consultation of books in the Library of the Surgeon-General's Office and the examination of the valuable specimens in the Army Medical Museum.

Three associations—the Hospital Medical Society, the Historical Club and the Journal Club—meet in the Assembly Room of the Hospital, one on each Monday evening from October to June.

The Johns Hopkins Hospital Bulletin, issued monthly, and the Johns Hopkins Hospital Reports contain the proceedings of the Hospital Societies, articles by the Hospital staff, and the results of researches conducted in the Hospital and the laboratories.

REGULATIONS REGARDING MICROSCOPES FOR GRADUATE COURSES

Those who take the practical graduate courses requiring the use of a microscope (Pathology, Bacteriology, and Clinical Microscopy) must provide their own microscopes, as the laboratories do not supply microscopes for the graduate courses. The microscopical outfit should include an oil-immersion objective and a sub-stage illuminating apparatus.

STATEMENTS AS TO THE COURSES OF INSTRUCTION FOR GRADUATES IN MEDICINE

1. NORMAL HISTOLOGY AND MICROSCOPIC ANATOMY

For those who may not be adequately prepared to follow the laboratory courses in Pathology, Bacteriology and Clinical Microscopy, a special preliminary course in Normal Histology and Microscopic Anatomy is given during the month of April.

2. PATHOLOGY AND BACTERIOLOGY

Instruction in these subjects is under the direction of Dr. William H. Welch, Professor of Pathology, Johns Hopkins University, and Pathologist to the Johns Hopkins Hospital, Dr. Lewellys F. Barker, Associate Professor of Pathology and Resident Pathologist to the Hospital, Dr. William G. MacCallum, Assistant in Pathology, Dr. Norman MacL. Harris, Assistant in Bacteriology, and Dr. Eugene L. Opie, Assistant in Pathology.

The instruction is given in the Pathological and Clinical Laboratories of the Johns Hopkins University and Hospital. The courses are open to physicians, medical students, and advanced students in biology, who have had the requisite training in normal histology.

By special arrangement with the Head of the Department, a limited number of suitably trained physicians may follow the regular undergraduate courses in Bacteriology and Pathology from October to June (see Part I, p. 63).

I. PATHOLOGY.

The course in Pathology for physicians is conducted separately from that for candidates for the degree of

Doctor of Medicine. The physicians' course begins on the first of May and continues on three afternoons of the week for two months. This course embraces pathological histology, the demonstration of fresh pathological specimens, and the technique of post-mortem examinations. A useful collection of museum specimens also is employed in demonstrating gross lesions.

The course begins with the study of inflammation and takes up in regular order the pathological histology of the different organs and tissues of the body, including the pathology of tumors. Microscopic sections are given to be stained, mounted, and carefully studied.

Frequent opportunities are afforded to witness the post-mortem examinations made in the autopsy theatre, which is a part of the Pathological Laboratory.

II. BACTERIOLOGY.

The course in bacteriology for physicians, limited to thirty students, is conducted by Dr. Harris. It begins the first of May and continues for six weeks. This course consists in practical work in the bacteriological laboratory, which occupies rooms in the pathological building. The student is taught the preparation of culture media, the principles of disinfection and sterilization, methods of cultivating, staining, and studying bacteria, the biological examination of water, air, and soil, and familiarity with the important bacterial species, particularly those of a pathogenic nature. This department is fully supplied with the requisite apparatus and cultures for bacteriological work.

III. LECTURES.

A course of lectures on selected subjects relating to Infection and Immunity is given by Dr. Welch.

IV. ADVANCED AND SPECIAL WORK.

Opportunity is provided for advanced work and special research in Pathological Histology, Experimental Pathology, and Bacteriology for those fitted to undertake it. Special workers are received at any time during the academic year (October to June).

The laboratory is equipped with abundant material for investigations in pathological histology, with the necessary apparatus for work in experimental pathology, and with cultures and facilities for bacteriological research. There is a sufficient supply of fresh material from the wards of the Hospital and from the post-mortem examinations. Special subjects for research will be assigned to those who wish and are prepared to undertake original investigation.

3. CLINICAL MICROSCOPY

This subject, which is under the general supervision of the department of medicine, is taught by Dr. T. B. Futcher, Associate in Medicine, Dr. Thomas McCrae, Instructor in Medicine, and assistant demonstrators.

The course consists in practical work in the Clinical Laboratory on two afternoons a week during May and June. The various methods of examining blood, sputum, secretions, excretions, and in general the applications of the microscope to diagnosis and other aspects of clinical medicine, will be taught practically.

4. MEDICINE

Instruction in Medicine is given under the direction of Dr. William Osler, Professor of Medicine in the Johns Hopkins University and Physician-in-Chief to the Hospital, with whom are associated Dr. W. D. Booker, Clinical Professor of Pediatrics, Dr. H. M. Thomas, Clinical Professor of Neurology, Dr. W. S. Thayer, Associate Professor of Medicine, Dr. T. B. Futcher, Associate in Medicine, Drs.

Frank R. Smith, H. B. Jacobs and Thomas McCrae, Instructors in Medicine, and Dr. Louis P. Hamburger, Assistant in Medicine. The course in Medicine is so arranged as to leave the afternoons free for courses in Clinical Microscopy and Pathology.

I. WARD WORK.

The class is taken into the wards four mornings in the week from 9 to 11 a. m. The members see the new cases examined, have opportunity themselves personally to examine patients, and especially to obtain proficiency in physical diagnosis.

II. DISPENSARY.

Clinics are given in the dispensary in general medicine, neurology and diseases of children.

III. CLINICS.

Dr. Osler or Dr. Fitcher gives a weekly clinic in the amphitheatre upon cases or groups of cases illustrating points in diagnosis or treatment of general diseases. Dr. Thayer gives a weekly clinic, and those who are pursuing the course in medicine are given the privilege of attending the surgical and gynecological clinics held weekly in the amphitheatre.

IV. LECTURES.

A lecture on pathology by Dr. Welch is given weekly in the amphitheatre. There is a weekly lecture also on diseases of the stomach (Dr. McCrae) and on diseases of children (Dr. Booker).

V. PHYSICAL DIAGNOSIS.

Two mornings in the week a course in physical diagnosis will be given by Dr. McCrae to a limited number of students. A special fee will be charged for this course.

5. SURGERY

Instruction in Surgery is given under the direction of Dr. W. S. Halsted, Professor of Surgery, Johns Hopkins University, and Surgeon-in-Chief to the Johns Hopkins Hospital, with whom are associated Dr. J. M. T. Finney, Associate Professor of Surgery, Dr. J. C. Bloodgood, Associate in Surgery, Dr. Hugh H. Young, Instructor in Genito-Urinary Diseases, and Dr. Harvey W. Cushing, Associate in Surgery and Resident Surgeon to the Hospital. The course in Surgery is so arranged that it can be taken in connection with the course in Gynecology, or with the laboratory courses in Bacteriology and Pathology.

I. WARDS.

Bedside teaching in general surgery is given by Dr. Halsted or Dr. Cushing, five mornings in the week from 9 to 10 a. m.

II. SURGICAL OPERATIONS.

Operations are performed daily, with the exception of Friday, in the general operating room, from 10 a. m. to 1 p. m.

III. SURGICAL PATHOLOGY.

A laboratory course in surgical pathology by Dr. Bloodgood is given two afternoons in the week, covering the macroscopical and microscopical examination of pathological material from the operating rooms.

IV. CLINICS.

Dr. Halsted and Dr. Finney give a weekly clinic in the amphitheatre. Those taking the course in surgery have the privilege also of attending the amphitheatre clinics by Dr. Osler and Dr. Kelly, and the weekly lecture in pathology by Dr. Welch.

6. GYNECOLOGY

Instruction in Gynecology is given under the direction of Dr. H. A. Kelly, Professor of Gynecology in the Johns Hopkins University and Gynecologist-in-Chief to the Hospital, aided by Dr. W. W. Russell and Dr. T. S. Cullen, Associates in Gynecology, and the Resident Gynecologist of the Hospital. The course in Gynecology is so arranged that it can be taken in connection with the course in Surgery, or with the laboratory courses in Bacteriology and Pathology.

I. GYNECOLOGICAL OPERATIONS.

Operations are performed by Drs. Kelly and Russell in the private operating room, four times weekly, from 9 a. m. to 12 m.

II. WARDS.

Instruction is given weekly in the wards upon the after-treatment of cases which have been operated upon.

III. GYNECOLOGICAL DIAGNOSIS.

From May 22 to July 1 Dr. Russell gives instruction one morning in the week, 9 a. m. to 12 m. in gynecological diagnosis. The class will be limited to ten. The work consists of the examination under anæsthesia of cases referred from the dispensary. Many of these cases are subsequently operated on before the class.

IV. GYNECOLOGICAL PATHOLOGY.

Dr. Cullen gives a special course in gynecological pathology, particular attention being given to the examination of uterine scrapings.

V. CLINICS.

Dr. Kelly gives a weekly clinic in the amphitheatre. Those taking the gynecological course have the

privilege of attending also the amphitheatre clinics in medicine and surgery, and the weekly lecture in pathology by Dr. Welch.

7. SPECIAL DEPARTMENTS OF PRACTICAL MEDICINE AND SURGERY

A limited number of students will be received in the various specialties on application to the heads of the departments.

I. DERMATOLOGY.

Clinics and class-room demonstrations are given by Dr. J. Williams Lord or Dr. T. Caspar Gilchrist, Clinical Professors of Dermatology in the Johns Hopkins University and Dermatologists to the Hospital.

II. DISEASES OF CHILDREN.

Clinics and class-room demonstrations are given by Dr. William D. Booker, Clinical Professor of Pediatrics.

III. DISEASES OF THE NERVOUS SYSTEM.

Clinics and class-room demonstrations are given by Dr. Henry M. Thomas, Clinical Professor of Neurology.

IV. GENITO-URINARY DISEASES.

Clinics and class-room demonstrations are given by Dr. Hugh H. Young, Instructor in Genito-Urinary Diseases.

V. LARYNGOLOGY AND RHINOLOGY.

Clinics and class-room demonstrations are given by Dr. John N. Mackenzie, Clinical Professor of Laryngology and Laryngologist to the Hospital, or by his assistants.

VI. OPHTHALMOLOGY AND OTOTOLOGY.

Clinics and class-room demonstrations are given by Dr. Samuel Theobald, Clinical Professor of Ophthalmology and Otology and Ophthalmic and Aural Surgeon to the Hospital, by Dr. Robert L. Randolph, Associate in Ophthalmology and Otology and Assistant Ophthalmic and Aural Surgeon to the Hospital, and by Dr. Henry O. Reik, Assistant in Ophthalmology and Otology.

INSTRUCTION IN TROPICAL DISEASES

During the month of October a limited number of physicians will be admitted to a special class for the study of the important tropical diseases met with in this region, especial attention being given to malaria, dysentery, and typhoid fever. Preference will be given to officers of the Medical Departments of the Army and Navy.

Further details regarding this course will be given on application to the Registrar.

FEES FOR GRADUATE COURSES

Graduates of medical colleges may be admitted to single courses on the payment of the fees below named:

Medicine	\$50
Surgery	50
Gynecology	50
Clinical Microscopy	50
Pathological Histology (including post-mortem examinations and pathological demonstrations)	50
Bacteriology	50
Advanced and Special Work.....	25
Preliminary Course in Normal Histology.	25

Any two of these courses may be taken on the payment of a fee of \$75, and any three on the payment of a fee of \$100.

In the Pathological, Bacteriological, and Clinical Laboratories special charges are made for breakage and for damage to apparatus. A deposit of ten dollars as caution money is required, which is returned when the student leaves, if there are no charges against him.

Before entering upon any course of instruction in the Medical School, the student must obtain from the Dean of the Medical School, or his representative, a card certifying that he is qualified to follow the desired course. This card will be issued upon the payment of the requisite fee, and it must be presented to the instructors in the various courses at the beginning of the class work.

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